FAGOR
COCCION

ESTUDI
T E C N I C O

Nº 27

OVENS PYROLYSIS

MOD: 2HF-401 B
2HF-401 N
2HF-401 X

2HF-451 B
2HF-451 N
2HF-451 X

OCTUBRE 2001

PRESENTATION / INSTALLATION 3
- Carrying hand-holds 3
- Feet 3
- Identification plate 4
- Building-in housing 4
- Building-in dimensions / Precautions 5
- Fitting to front of housing 6
- Single cavity 7
- Cavity volume 7
- Shelves and fittings 8
- Supply / mains terminal strip flap 9
- Removable door 10

OVEN DOOR / EQUIPMENT 11
- Pyrolysis door locking 11
- Pyrolysis door ventilation 11
- Door window 12
- Door handle 12
- Outer window, pyrolysis door 13
- Triple glazed pyrolysis door 14
- Pyrolysis door 14
- Pyrolysis door equipment 15
- Holding inner window no. 2, pyrolysis door 15
- Pyrolysis door equipment 16
- Door hinges 16
- Door hinge type 17
- ”Triple glazed” pyrolysis door equipment 17
- Pyrolysis door seal (removal) 18
- Pyrolysis door seal (fitting / composition) 19

COOLING / SAFETY 20
- Protection from overheating 20
- Air flow (pyrolysis oven) 21
- Cooling / Vapour suction 22
- Insulation of the cavity 22
- Vent 23
- Fascia sealing 23

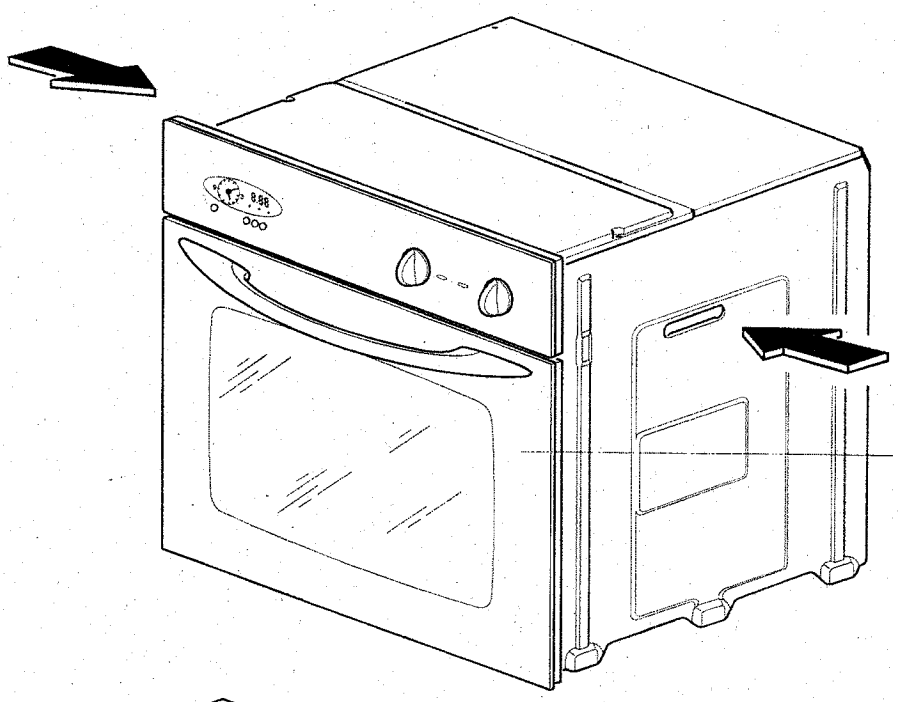
ACCESSIBILITY 24
- Oven lighting 24
- Component flap 24
- Top plate / Back case assembly 25
- Fascia operational assembly 25
- Glass fascia 26
- Heating elements 26
- Fan motor 27

PYROLYSIS 28
- Principle of pyrolysis 28
- Pyrolysis door locking 29
- Access to locking mechanism 29
- Locking microswitch 30
- Oven not operational; ”door locked” 31

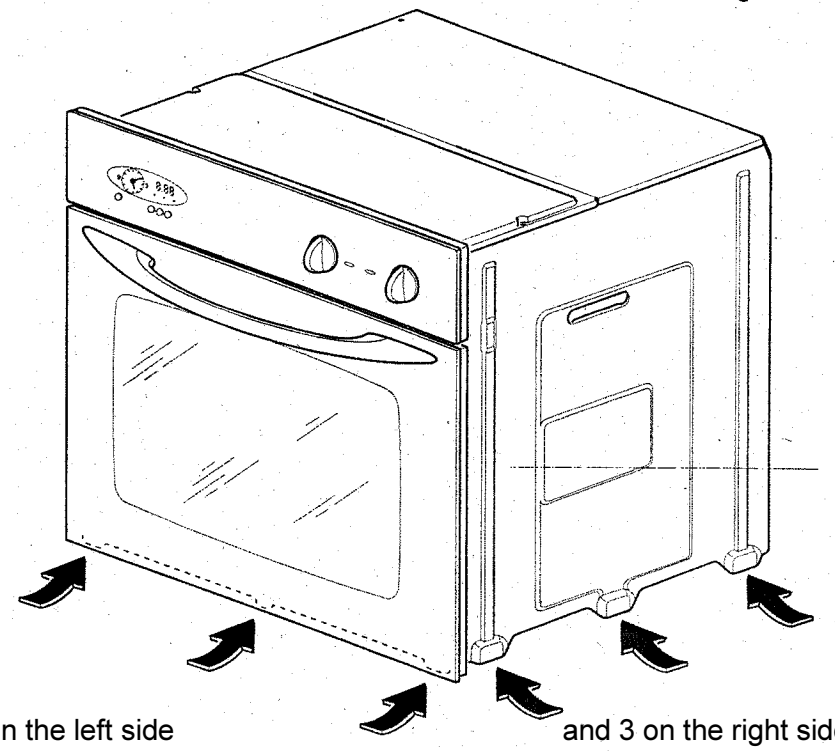
ELECTRONIC PROGRAMMER 32

PRESENTATION

CARRYING HANDHOLDS



FEET



With these, 3 on the left side and 3 on the right side in contact with the air (between the oven and the wall of the housing),

the following can take place:

- centring between walls of the housing,
- circulation of air under the appliance.

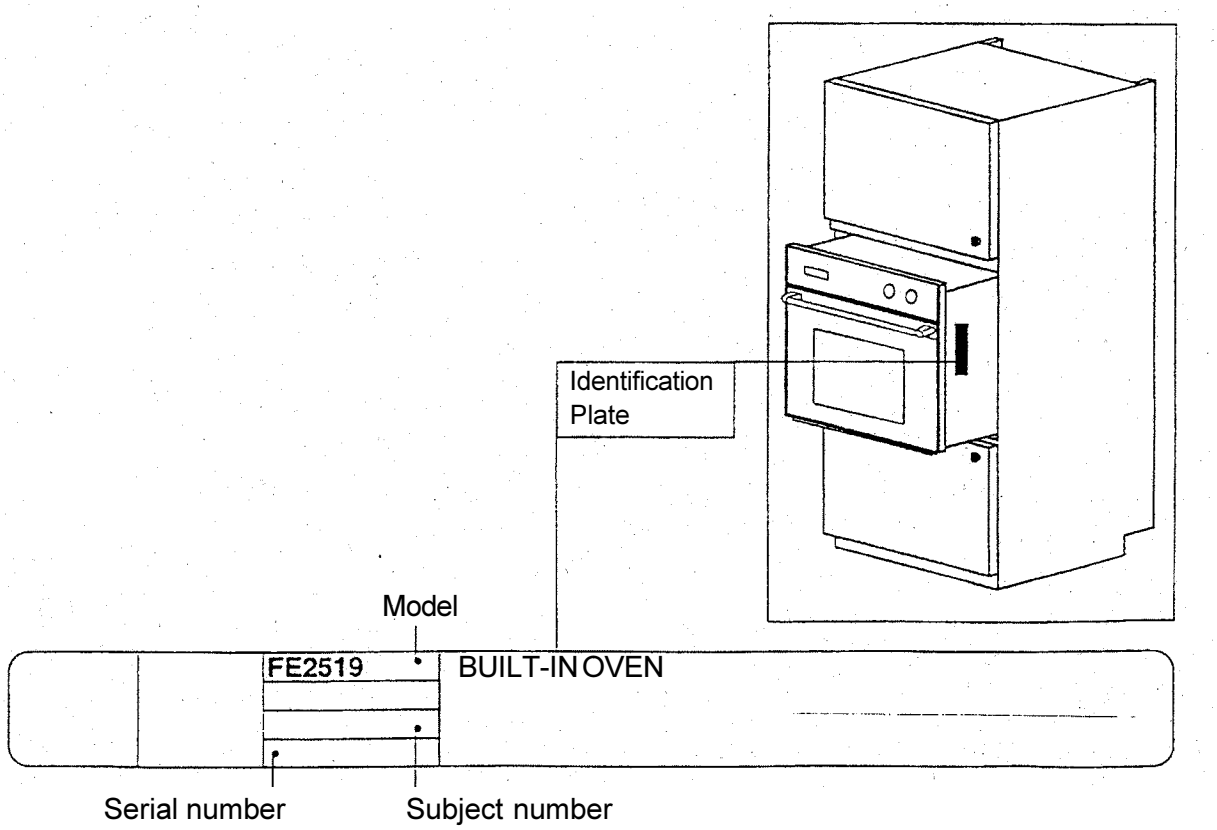
They prevent:

- the sides of the oven from being in contact with the housing walls,
- the underneath of the oven from being in contact with the housing.

IDENTIFICATION PLATE

LOCATED ON THE RIGHT SIDE OF THE OVEN

Information to be entered in the user manual



BUILDING-IN HOUSING

Oven with pyrolytic cleaning:

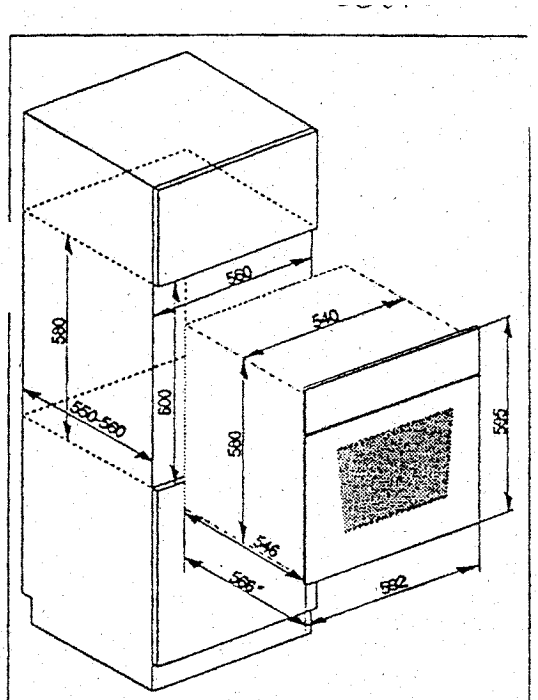
- Housing closed at the back.

Exhaustion of vapour/fumes is exclusively directed to the front of the oven:

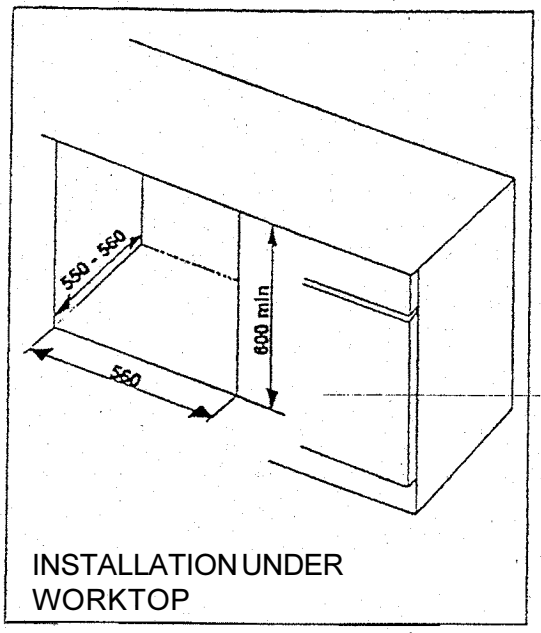
between the door and fascia.

BUILDING-IN DIMENSIONS / PRECAUTIONS

To prevent abnormal heating, a space of at least 5 mm must separate the frame of the oven from the adjacent panels (kitchen unit doors, etc.). The adjacent walls or their coverings and the adhesive must withstand a temperature of at least 100ºC.

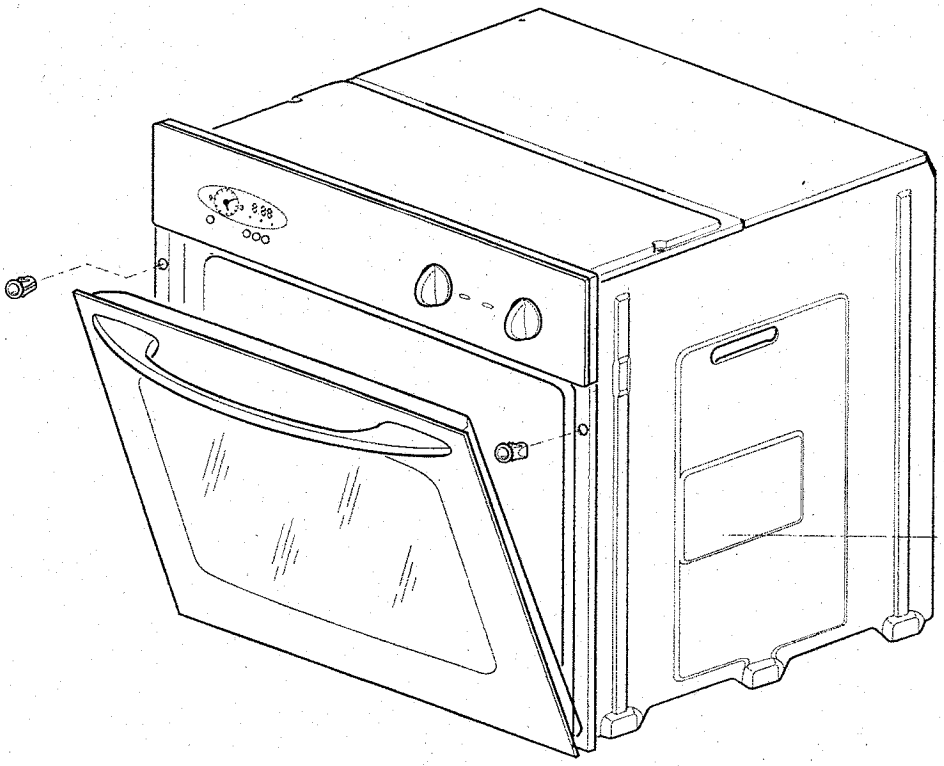


COLUMN INSTALLATION



INSTALLATION UNDER WORKTOP

FITTING TO FRONT OF HOUSING



The two sleeves are in place on the front of the oven.

- The orientation of these is such that (in the case of a unit with 18 mm thick walls) screwing in can be centred perfectly.

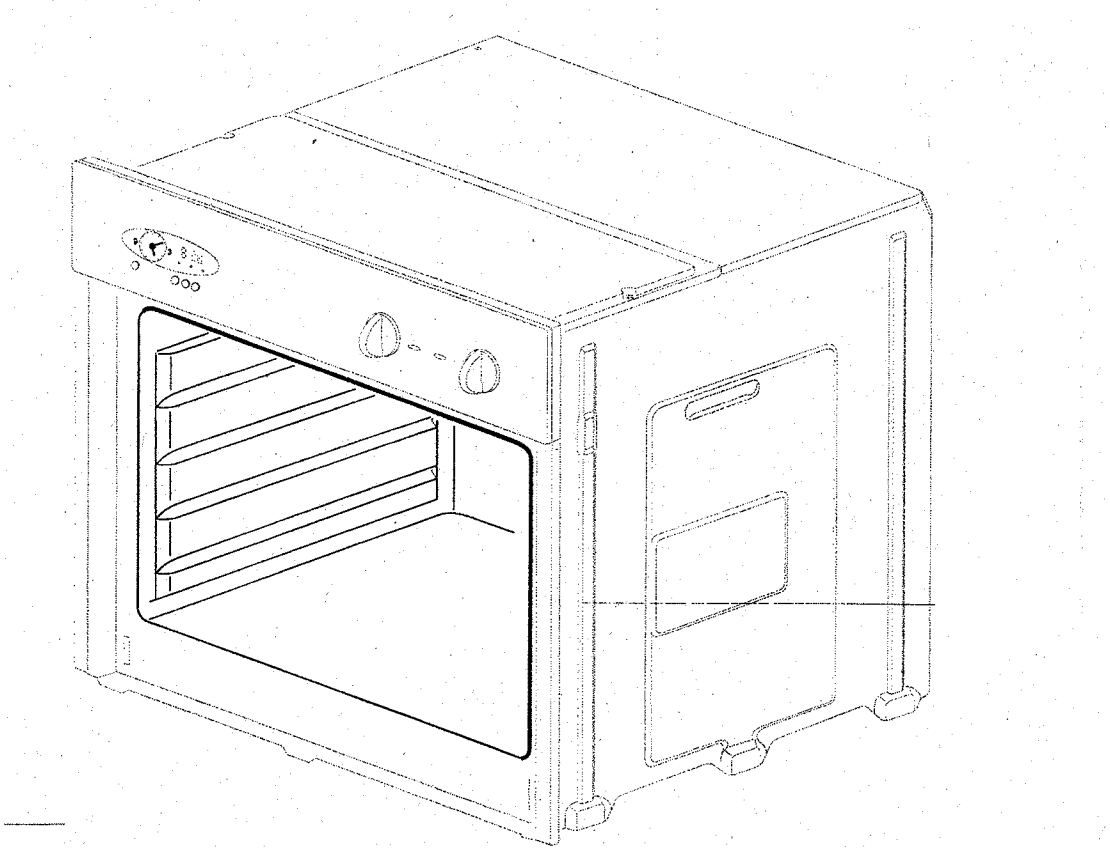
SINGLE CAVITY

A) Pressed (non-detachable) side rack shelf supports.

B) Non-detachable floor.

C) Enamel:

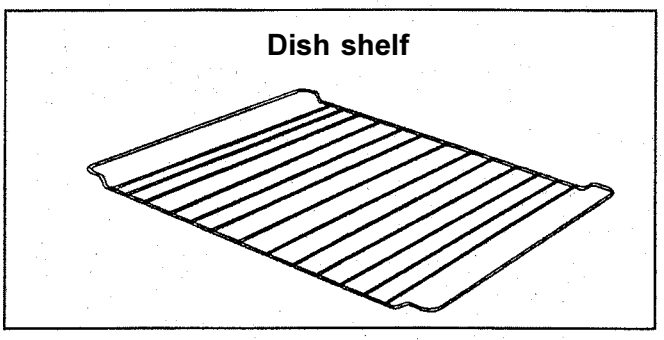
Pyrolysis: smooth, black

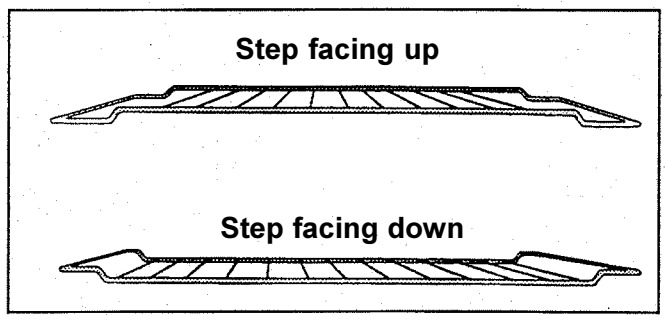


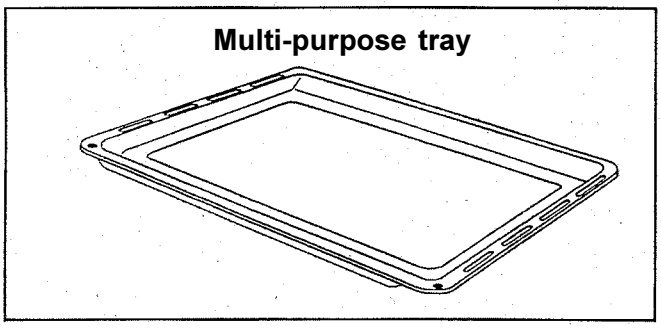
CAVITY VOLUME

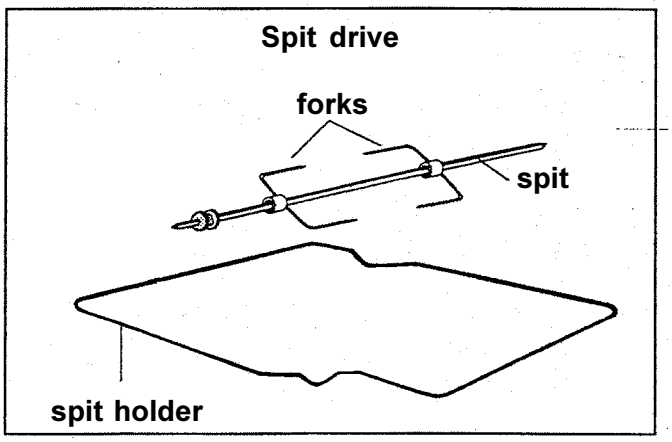
- Conventional, with pyrolysis: 55 litres
- Multi-function, with pyrolysis: 51 litres

SHELVES AND FITTINGS









Depending on the model, the oven can be:

- **delivered** with

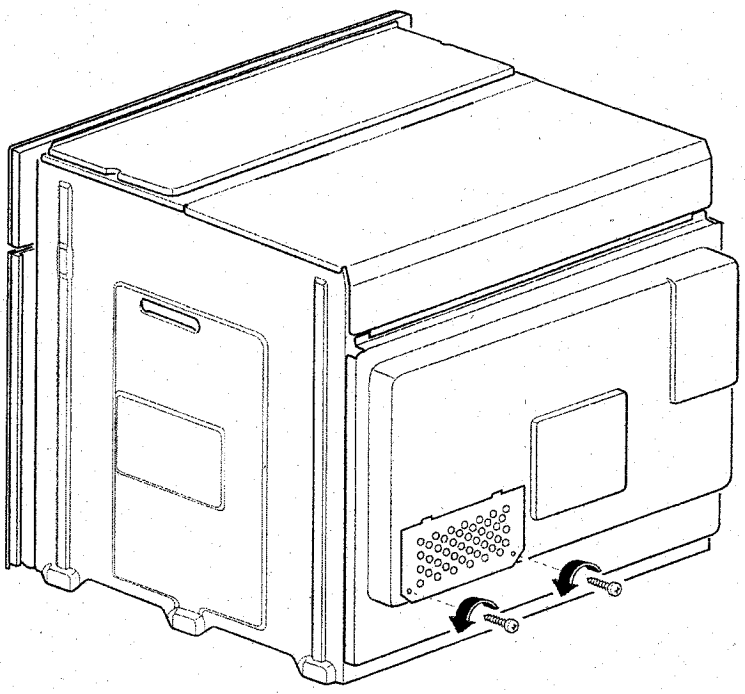
1 or 2 shelves

1 multi-purpose tray

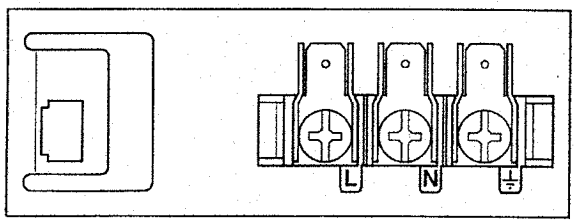
- **equipped** or not equipped with a spit drive.

The spit is systematically positioned diagonally (even in the non-multi-function ovens) so that larger items can be roasted.

SUPPLY / MAINS TERMINAL STRIP FLAP



3-pole terminal strip

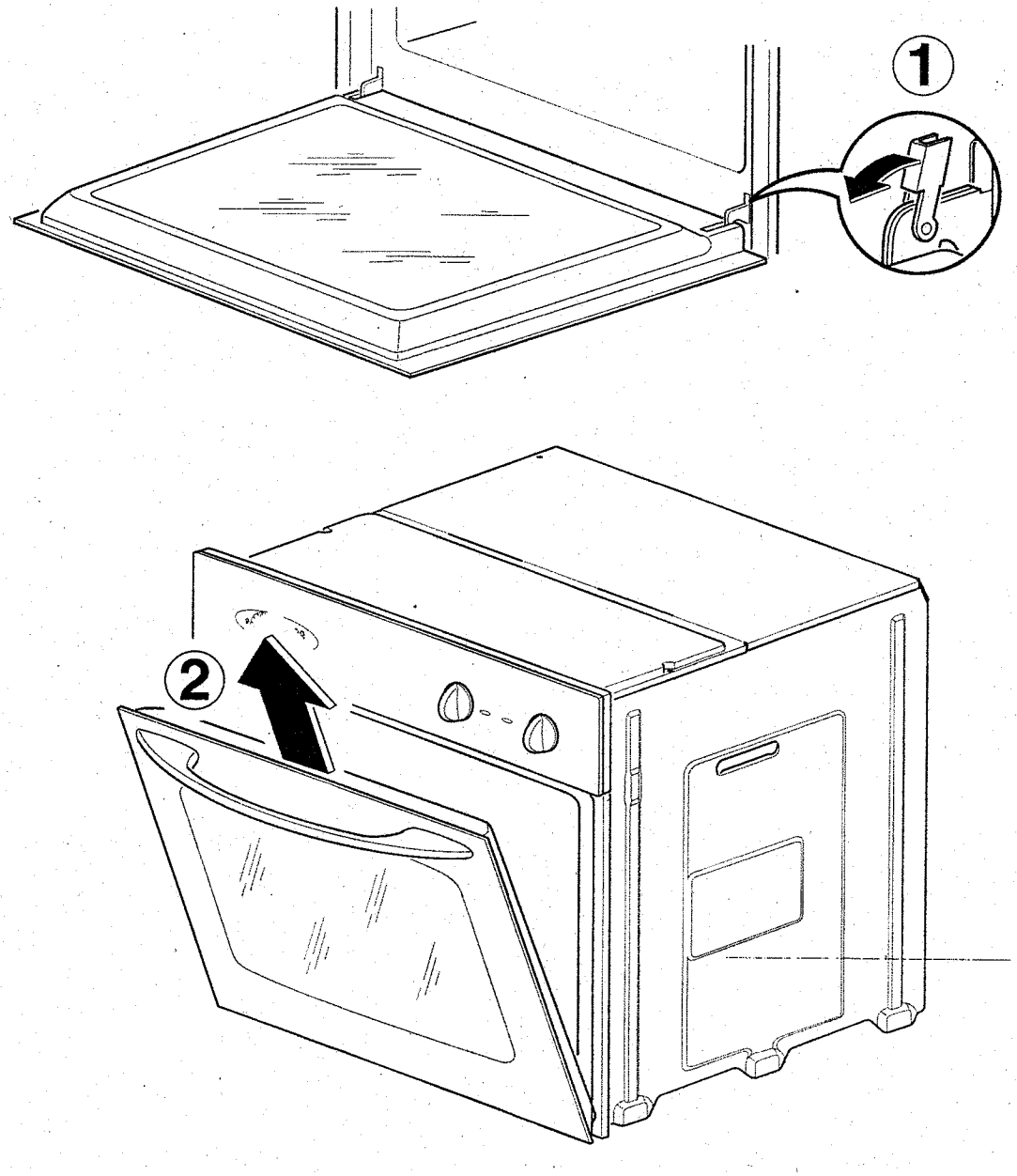


230 V single-phase oven

As is the case with all the sheet metal covering, the mains terminal strip flap must be correctly positioned and fastened so that the cooling circuit is formed in perfect conditions.

The ovens are equipped with a 1.50 m mains flexible lead (without plug).

REMOVABLE DOOR



1) Raise the locking lever on the right and left hinges.

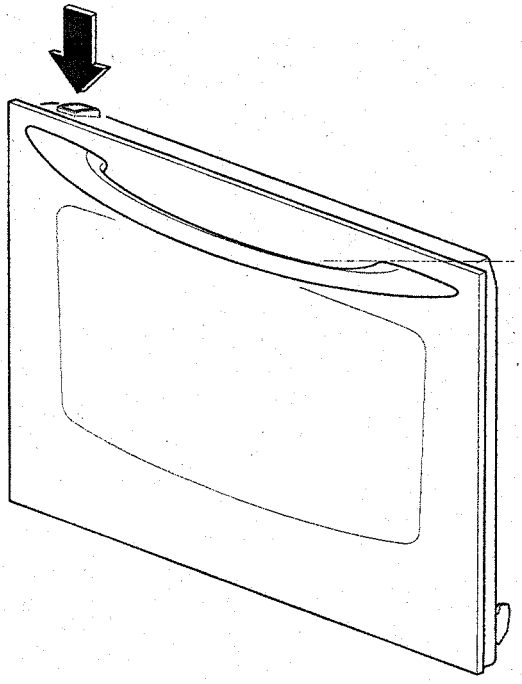
2) Close the door again to press against the locking levers.
Lift the door up to detach it.

IMPORTANT: to prevent consumers from causing after-sales service work, the user manual supplied with the oven does not mention the possibility of detaching the door. This operation is reserved for the after-sales service technicians.

OVEN DOOR / EQUIPMENT

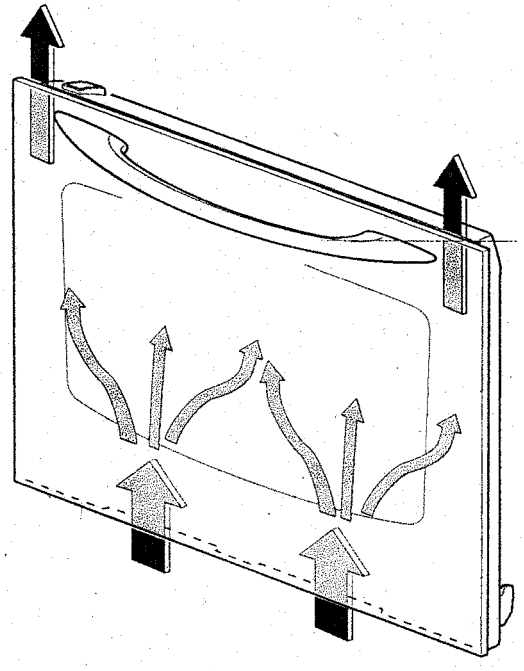
PYROLYSIS DOOR LOCKING

The catch finger located below the fascia prohibits opening of the door during the pyrolysis cycle.



PYROLYSIS DOOR VENTILATION

Natural ventilation of the door

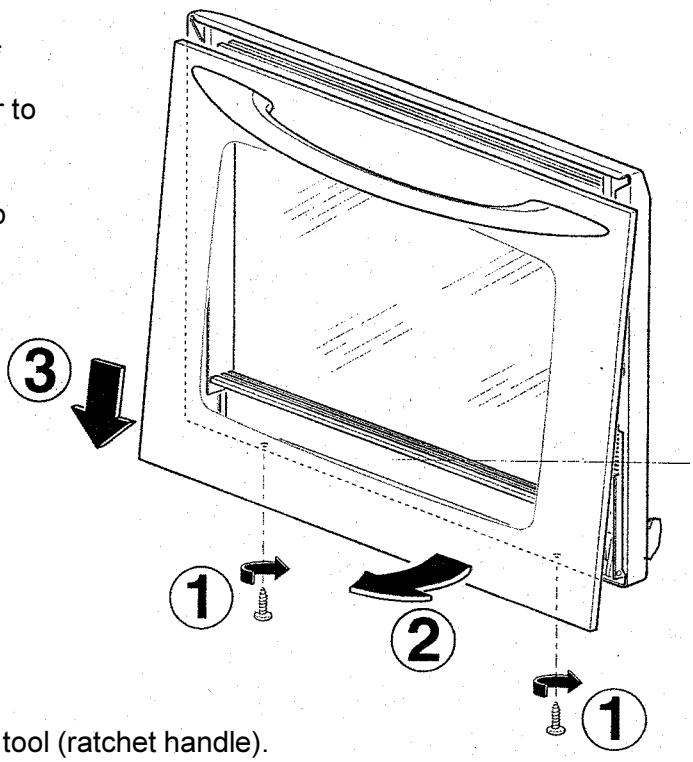


DOOR WINDOW

1) Remove the 2 window fastening screws.

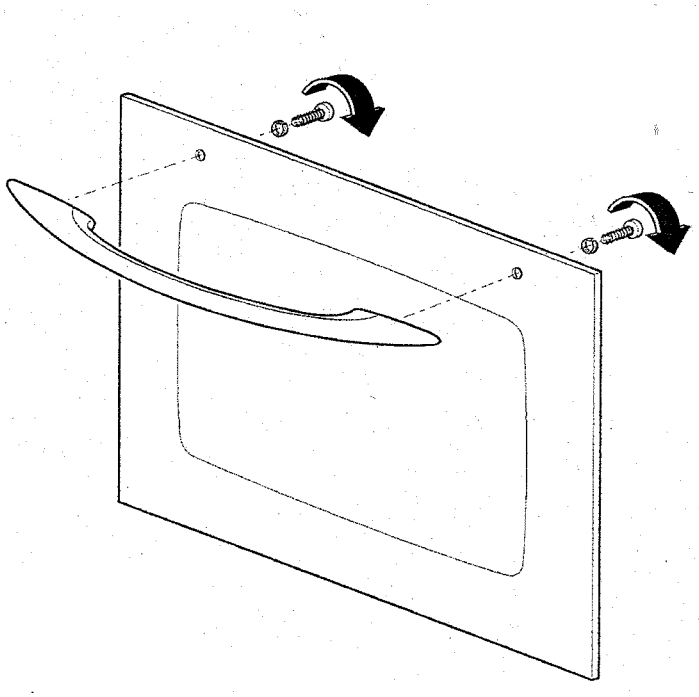
2) Separate the window from the inner door to release the lower fastening brackets.

3) Slide the window down to release the top fastening brackets.



DOOR HANDLE

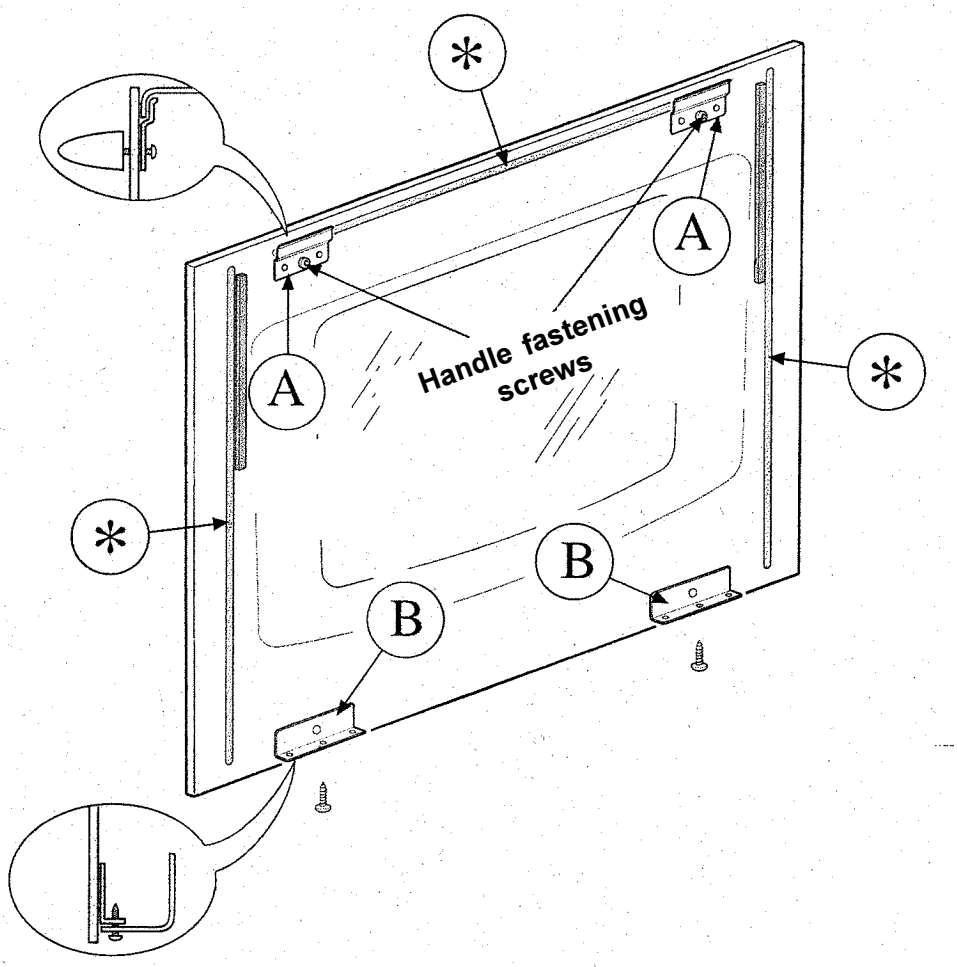
IMPORTANT: Do not tighten with a levered tool (ratchet handle).



Use a straight tool (screwdriver), which will limit tightening torque (a maximum of 30 Nm).
Use the screws supplied with the handle (and the washers, depending on the model).

OUTER WINDOW, PYROLYSIS DOOR

(WINDOW No. 3)



* = silicone providing the seal between the outer window and the inner door (cannot be applied as part of after-sales service)

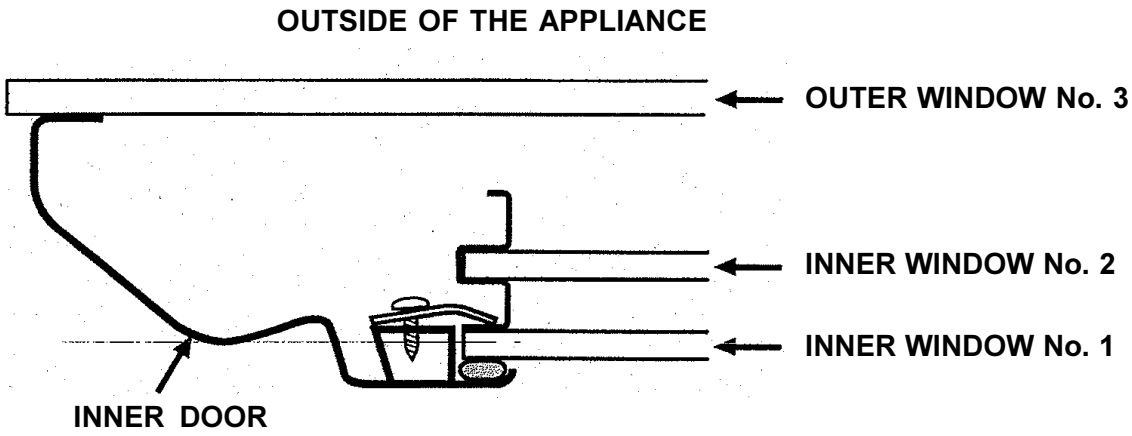
A = brackets providing for top fastening of the window (these are held by the handle fastening screws)

B = brackets providing for lower fastening of the window (cannot be stuck on as part of after-sales service)

- under after-sales service, the outer window is supplied with the lower brackets stuck on and the top brackets stuck on, the silicone providing the seal in place.

TRIPLE GLAZED PYROLYSIS DOOR

ARRANGEMENT OF WINDOWS



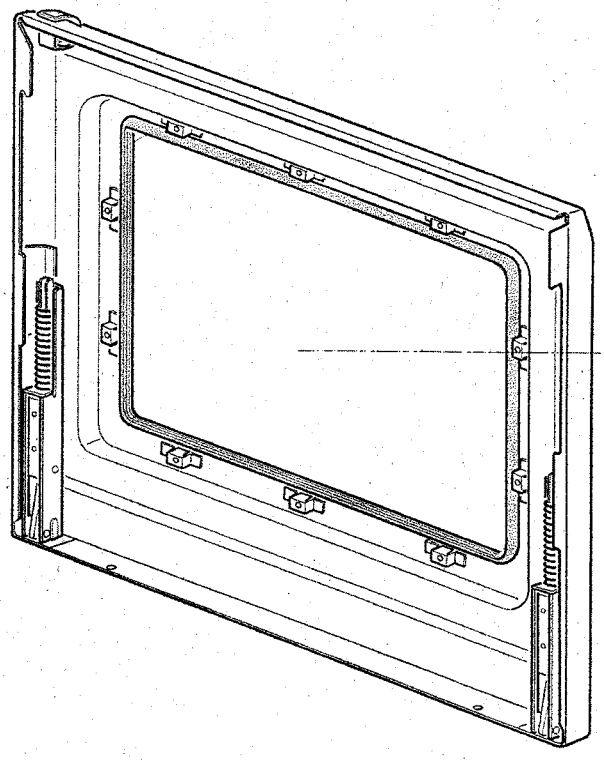
PYROLYSIS DOOR

Seal

Material: glass braid

Core: steel wire

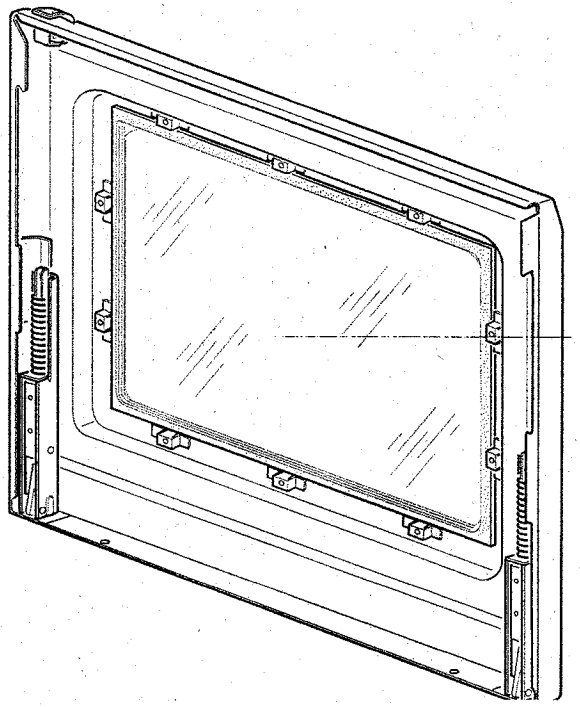
- Do not place the joint at the lower part of the door.



PYROLYSIS DOOR EQUIPMENT

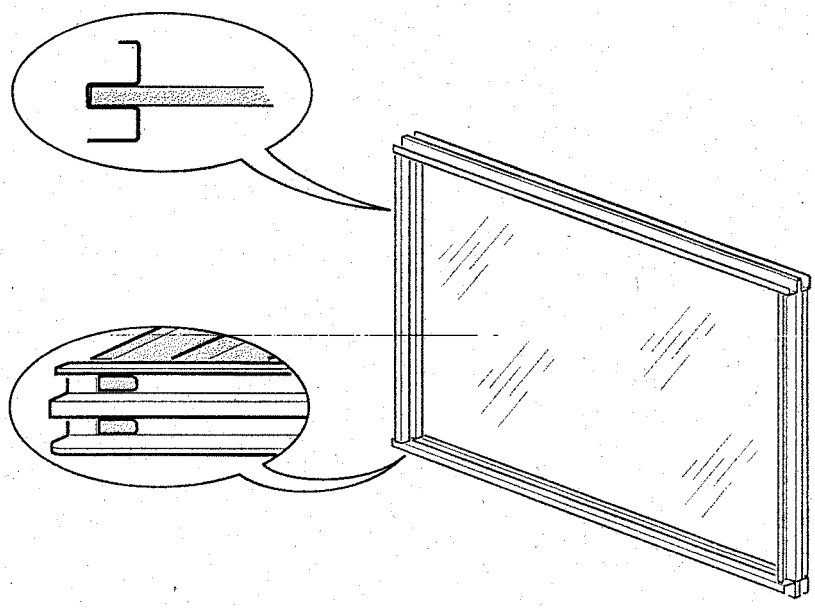
(INNER WINDOW No. 1)

Inner window

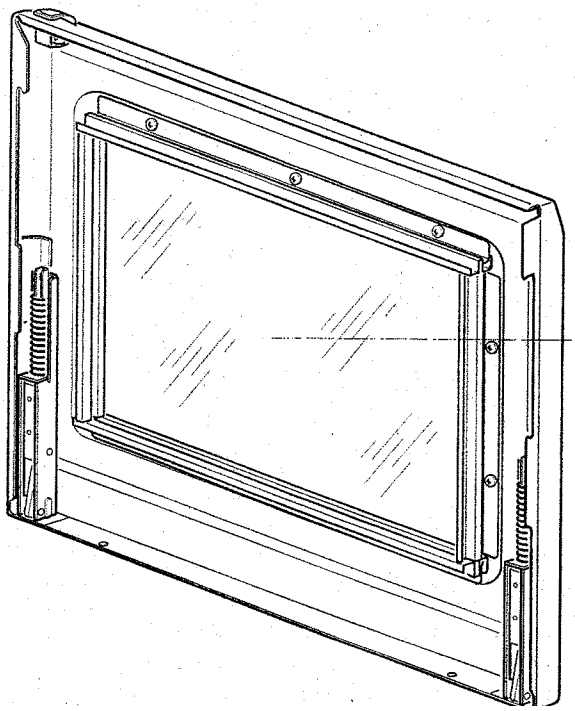


HOLDING INNER WINDOW No. 2, PYROLYSIS DOOR

It is inserted and held.



PYROLYSIS DOOR EQUIPMENT



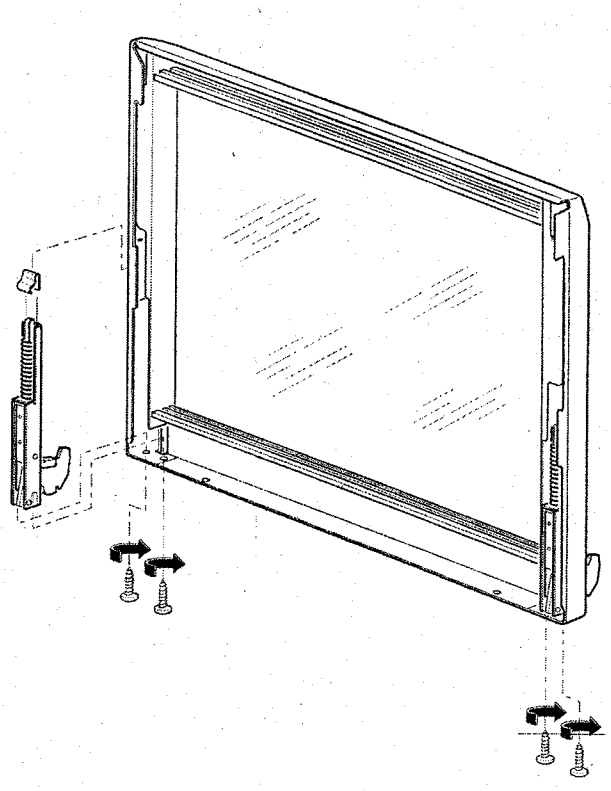
The assembled stainless steel section unit (with window) rests against inner window No. 1.

DOOR HINGES

These, which are held by two screws at the bottom, are slid under a tab at the top.

IMPORTANT:
a clip at the top prevents any play.

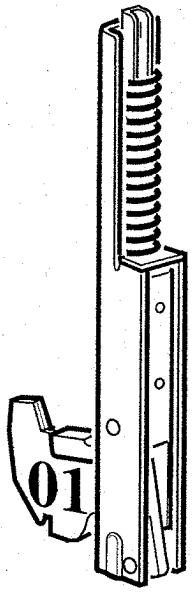
Note:
the right and left hinges are identical.



DOOR HINGE TYPE

In the case of replacing hinges, make sure that the new hinges have the same identification as the old ones (01, 02, etc.), this identification being identical on the right and left.

(The identification 01, 02,… corresponds to the strength of the spring, which is matched with the weight of the door).



"TRIPLE GLAZED" PYROLYSIS DOOR EQUIPMENT

1) Outer window:

Thickness: 4 mm

Type: Decorated clear glass

2) (Intermediate) inner window:

Thickness: 3.2 mm

Type: Semi-reflective

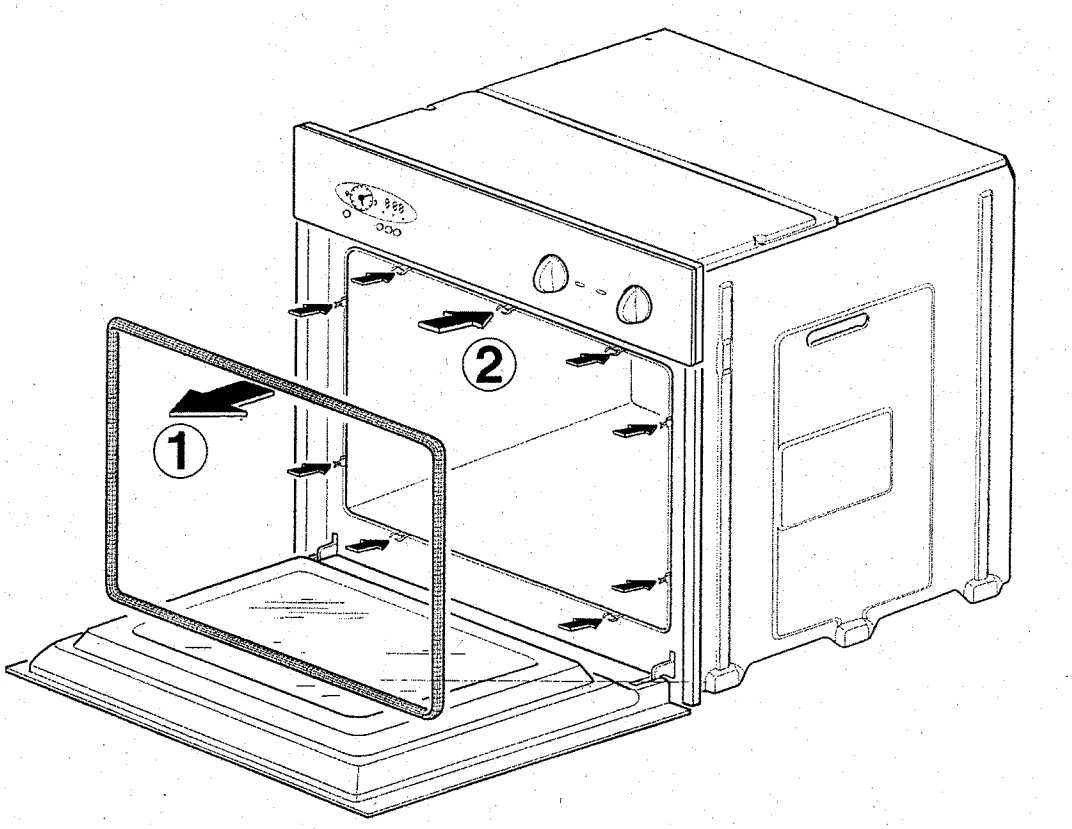
3) Inner window:

Thickness: 3.3 mm

Type: Borosilicate

PYROLYSIS DOOR SEAL

Remove the old seal.



1) Grip the seal at one corner and pull so that it comes away.

- Do not use any tools.

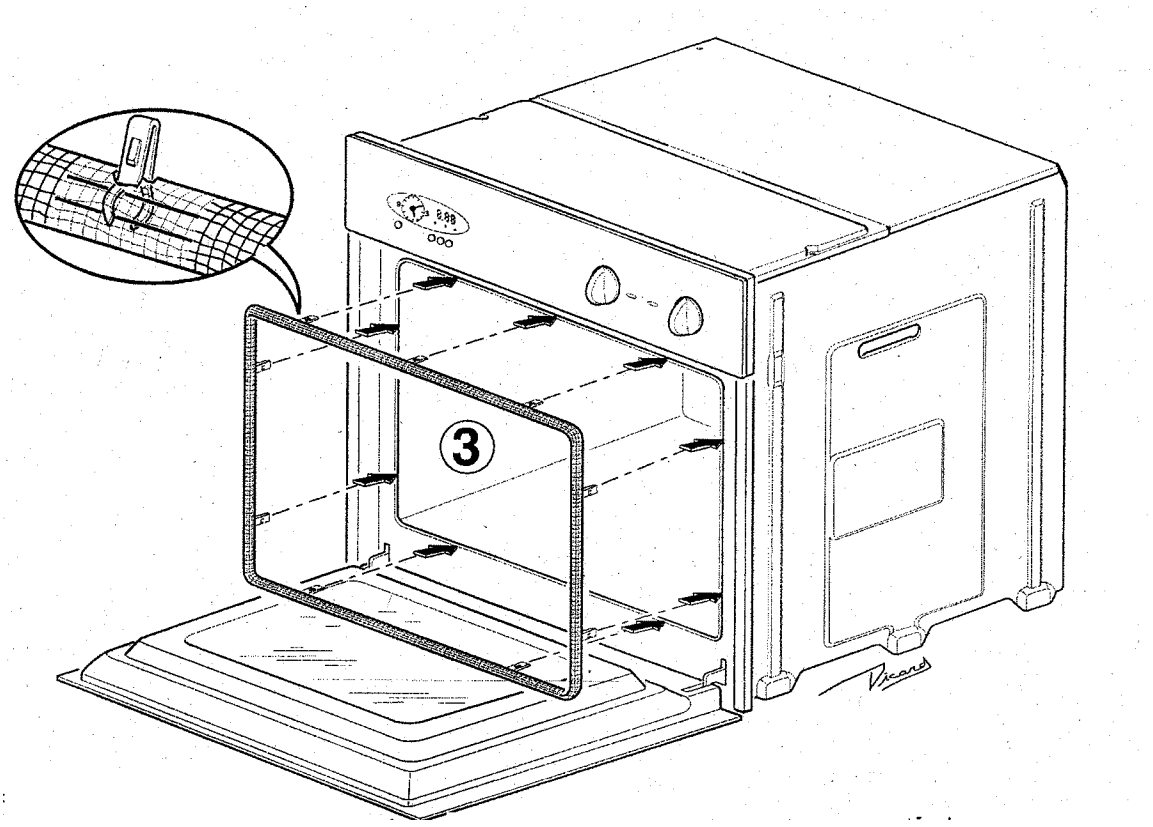
2) Clips which have remained in place between the cavity and frame of the oven front must be pushed back into the heat insulation.

- Trying to take them out would risk damaging the enamel of the oven front frame or of the cavity.

PYROLYSIS DOOR SEAL

Fitting a new seal.

Offer up and then turn ¼ of a turn to grip the core.



(3 on the top horizontal portion, 2 on the bottom horizontal portion and 2 on each vertical portion)

- The oven front frame and the cavity are connected by 4 fastening points (2 on each vertical section). Take care not to position any clips at these fastening points.

1) Offer up the seal (with the clips) and insert the clips in the spaces provided and then press on the assembly, which will automatically clip on.

PYROLYSIS DOOR SEAL

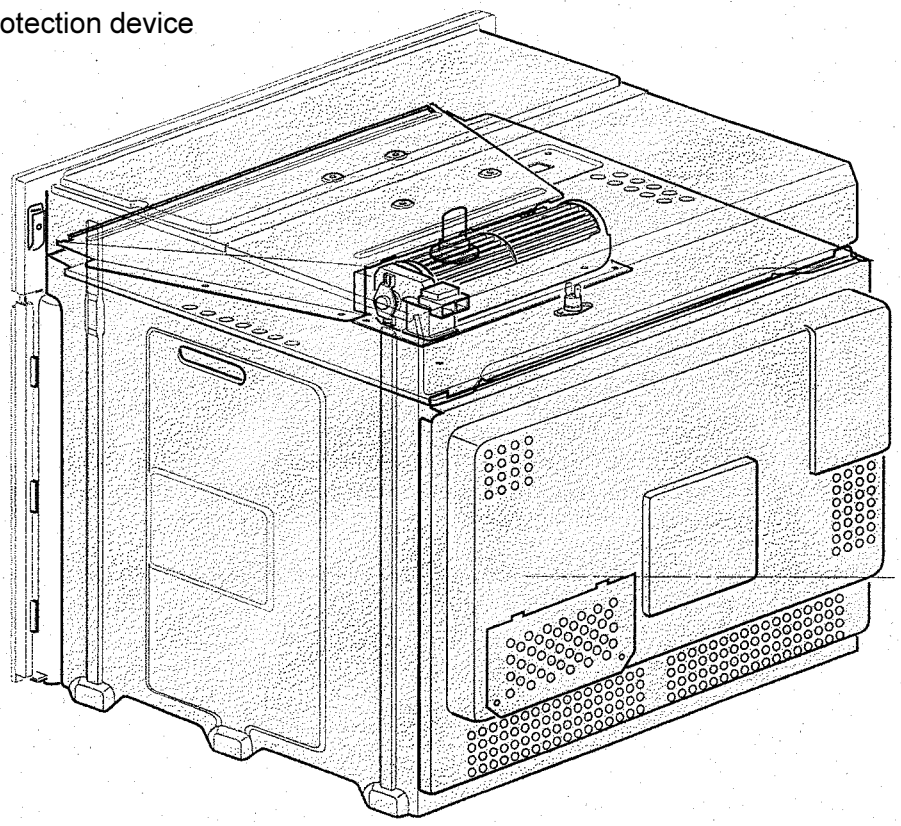
COMPOSITION

-	Core:	1 stainless steel wire (2 mm)
-	Flexible component:	8 braided stainless steel wires
-	Covering:	Glass braid (10 mm)
-	Colour:	Black
-	Operating Temperature:	500ºC
-	Anti-humidity treatment:	Yes

PROTECTION FROM OVERHEATING

Cooling motor

Thermal protection device



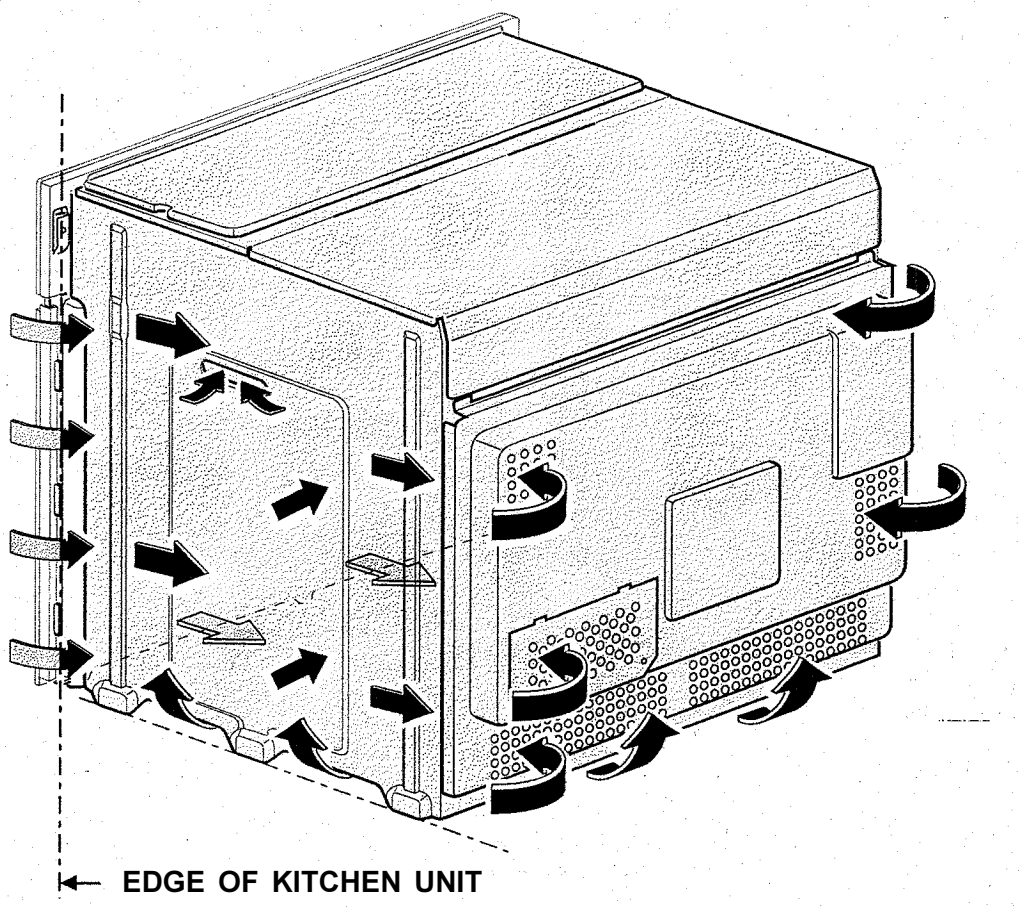
In the event of non-operation of the cooling motor and/or in the event of an abnormal temperature rise, a thermal protection device stops the appliance working. The programmer remains working.

AIR FLOW

PYROLYSIS OVEN

In order for the cooling circuit to operate correctly, it is essential that the appliance be fitted with all its sheet metal covering, mains terminal strip flap, etc.

- It is essential for the building-in housing to be completely closed to optimise cooling of the appliance.

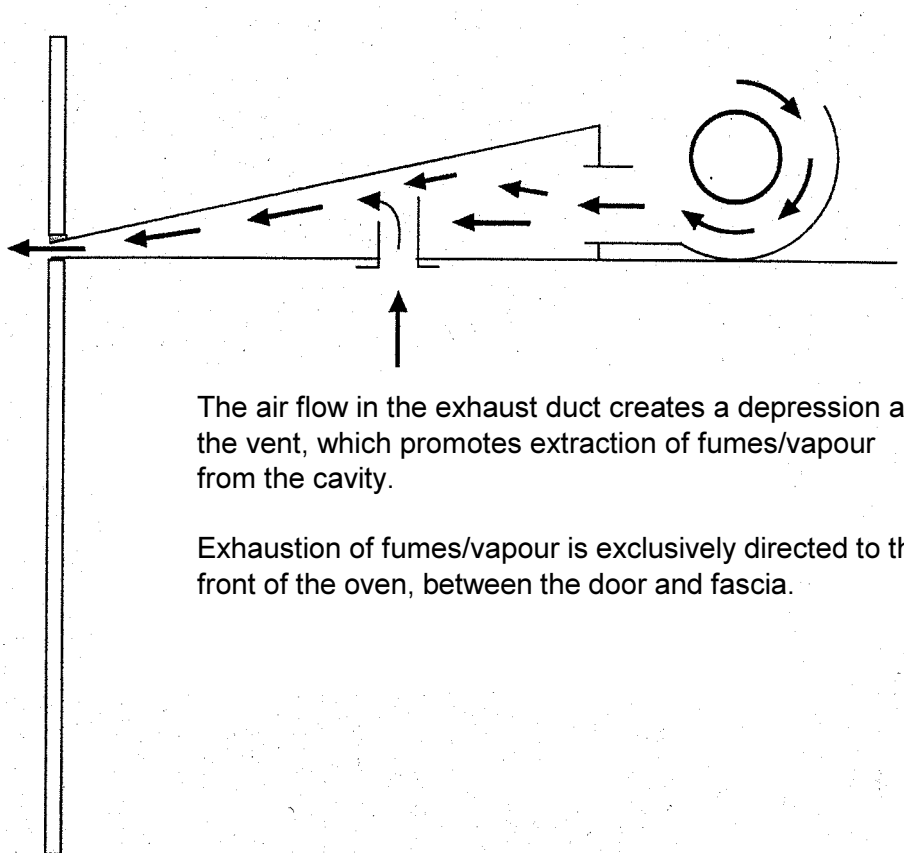


- The cooling motor takes in the air contained ”between the insulated cavity and the covering cases”.

- Fresh air penetrates ”between the insulated cavity and the covering cases”, after having circulated around the left and right outer sides of the oven and under the appliance, via the inlet holes located at the mains terminal strip, the spit drive motor, etc.

- Fresh air is taken in at the front, on the right and left sides and under the appliance.

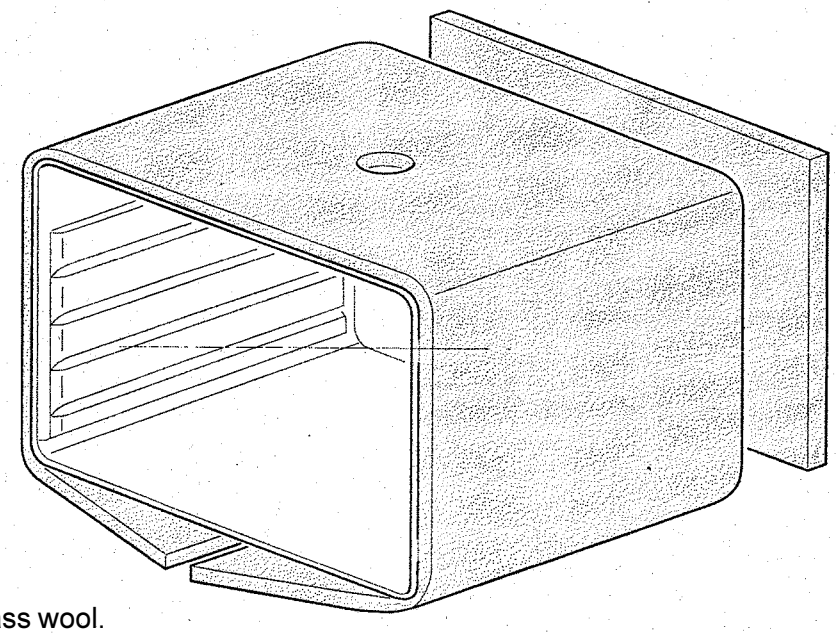
COOLING / VAPOUR SUCTION



The air flow in the exhaust duct creates a depression at the vent, which promotes extraction of fumes/vapour from the cavity.

Exhaustion of fumes/vapour is exclusively directed to the front of the oven, between the door and fascia.

INSULATION OF THE CAVITY



A heat insulating jacket is wrapped round the cavity.

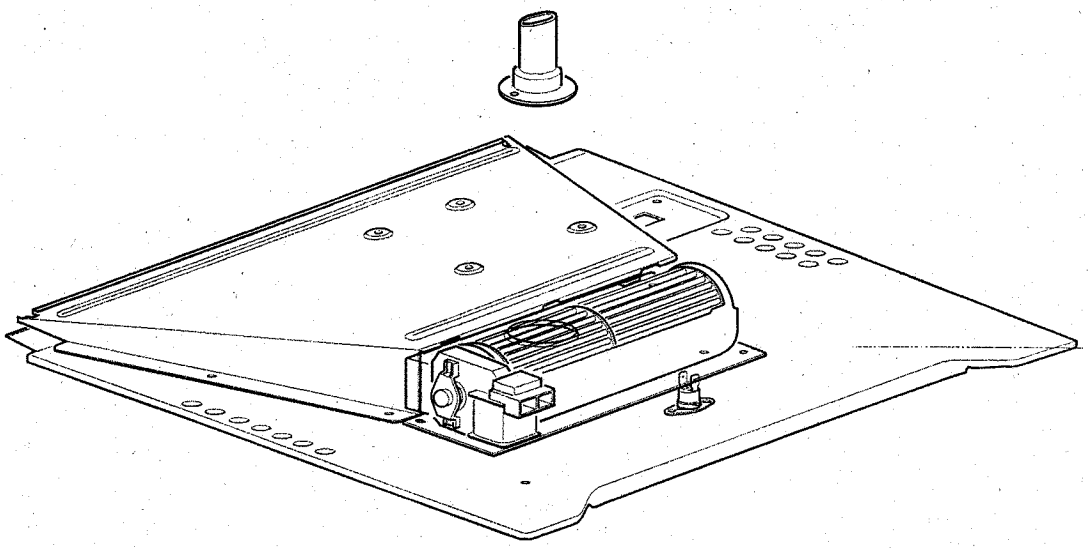
A panel of heat insulation provides rear insulation.

Material used:

- **pyrolysis** oven: high density glass wool.

VENT

The catalytic cartridge is inserted in the vent.



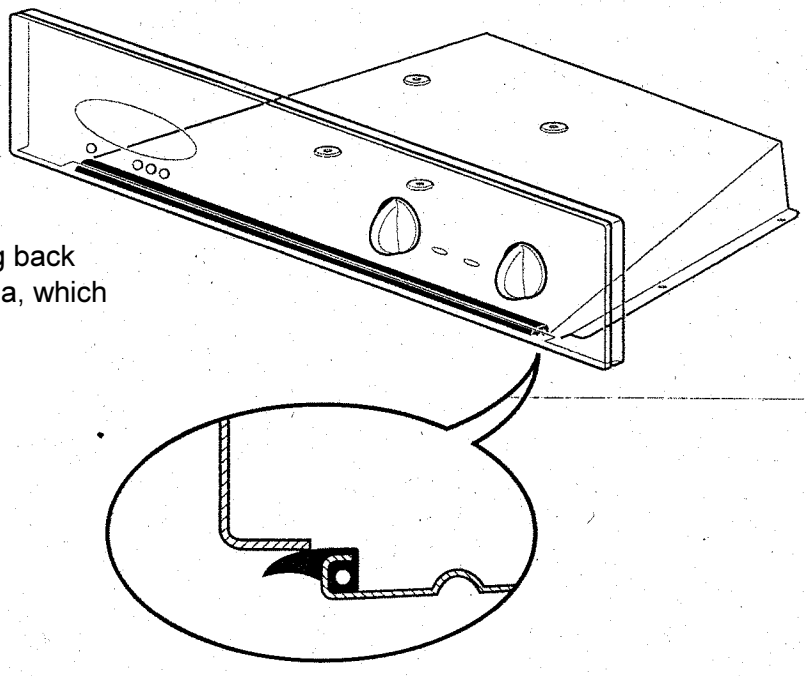
IMPORTANT:
The vent is angled at the top. It is essential to position it in the direction shown in the drawing (with the low part of the inclined plane facing the front of the oven).

Otherwise:

- vapour would no longer be drawn out of the cavity
- the air flow would enter the cavity.

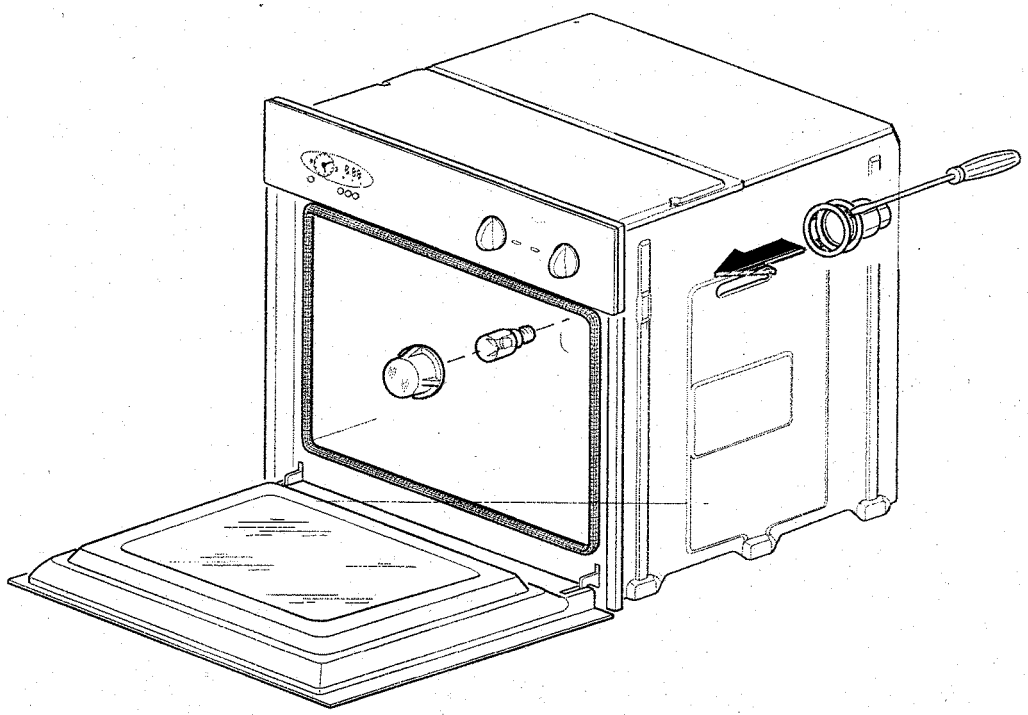
FASCIA SEALING

A seal preventing the air flow from turning back into the operational assembly of the fascia, which would be undesirable.



ACCESSIBILITY

OVEN LIGHTING

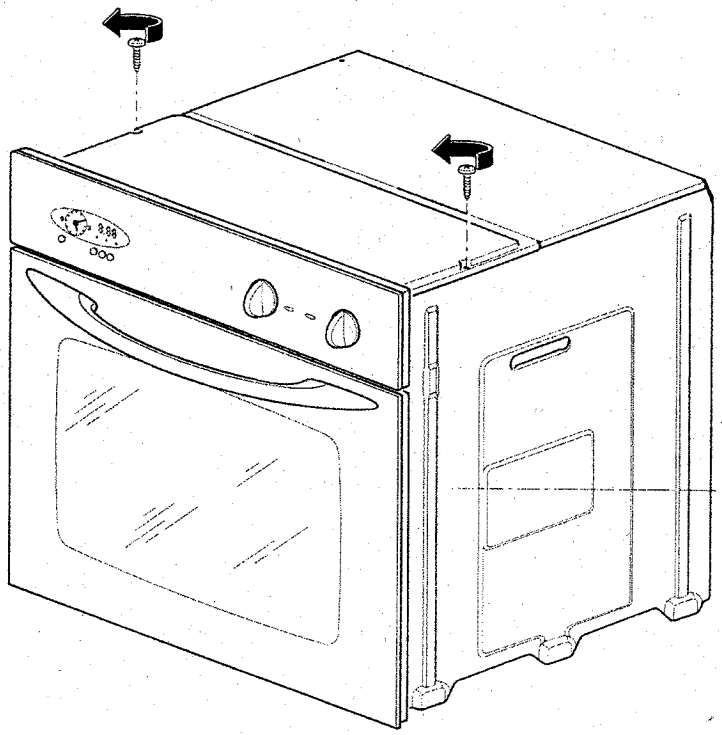


Bulb accessible from the cavity (E14 – 25 W - 300ºC)

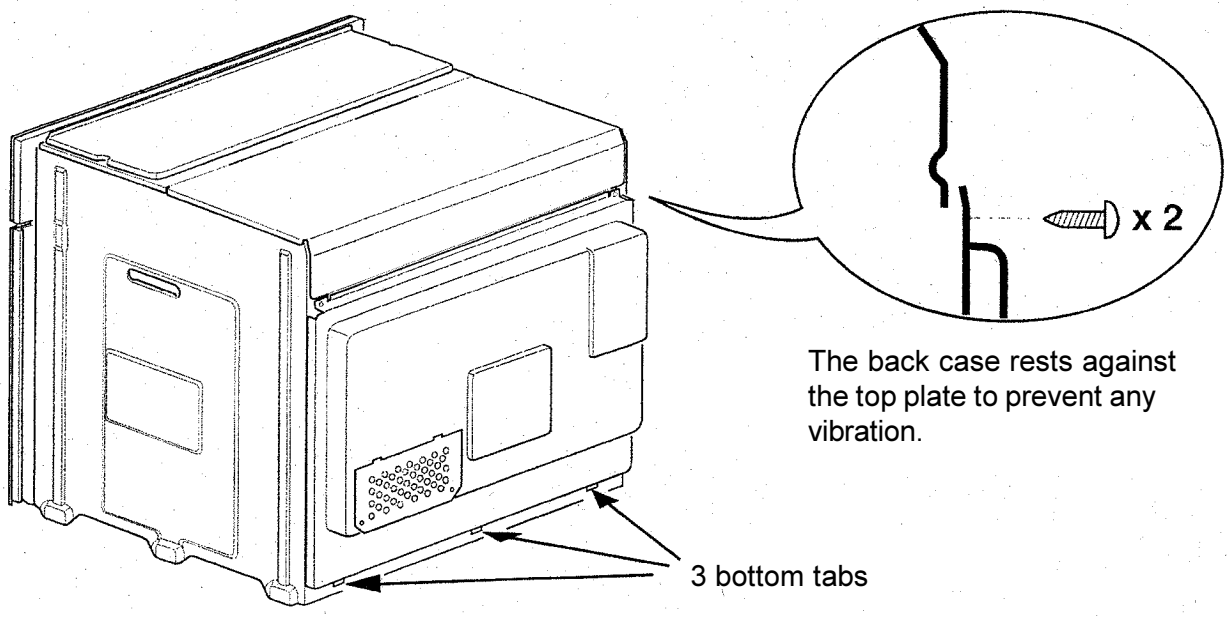
COMPONENT FLAP

- Due to this, it is possible during maintenance to carry out various checking and measuring operations, etc., without having to remove the oven from the housing altogether.

- Due to this, components located close to the fascia can be replaced.



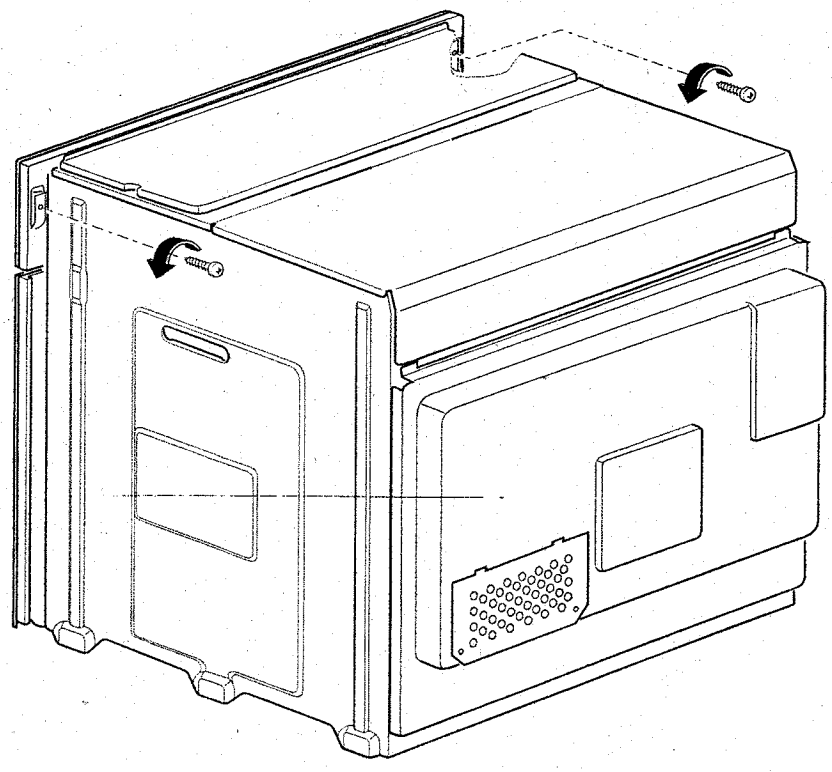
TOP PLATE / BACK CASE ASSEMBLY



FASCIA OPERATIONAL ASSEMBLY

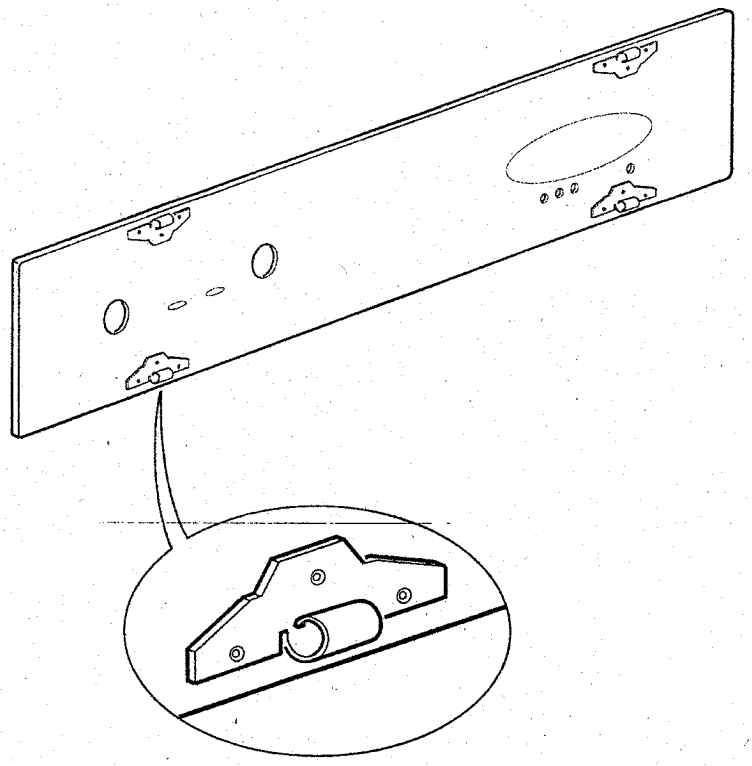
- the component support plate,
- fascia components (programmer, thermostat, etc.)
- and the fascia

  are separated from the frame when the 2 fastening screws have been removed.



GLASS FASCIA

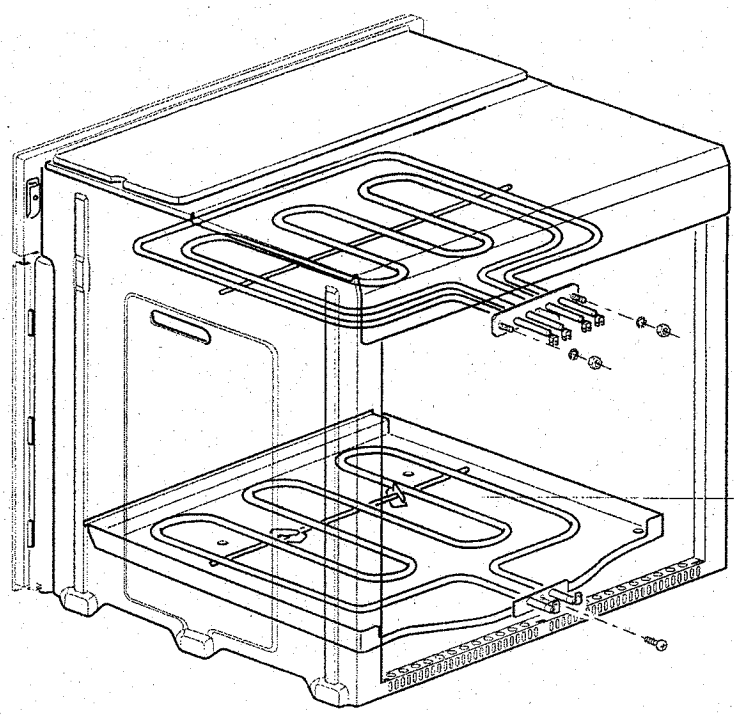
- Remove the control knobs, push-buttons, etc., located on the fascia.
- Depending on the model, the 4 stuck-on brackets are visible and accessible when the component flap has been removed. If the 4 brackets are not visible, remove the fascia operational assembly (see previous paragraph).
- Push the 4 brackets from the back, one by one, to remove them from the support.
- Do not insert any implements between the fascia and support to help you unclip the fascia. There is a risk of your chipping or breaking the glass fascia.
- Before clipping the fascia on again, please make sure the brackets have not become deformed (opened out). If necessary, press them with your finger.

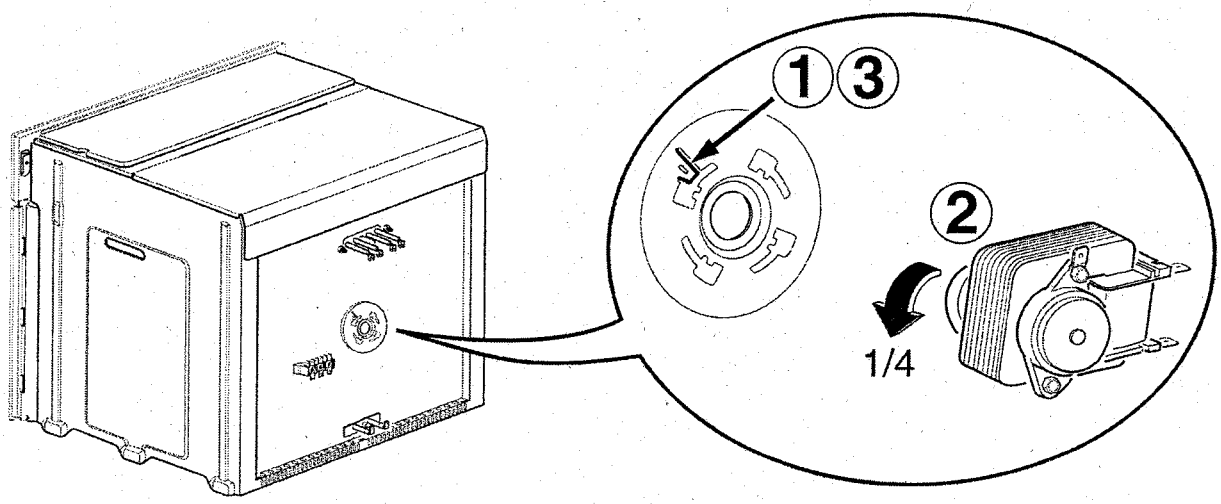


4 STUCK-ON BRACKETS

HEATING ELEMENTS

- The upper heating element (oven roof + grill) is located inside the cavity.
- The lower heating element (oven floor) is located under the cavity and is therefore not visible.
- The lower heating element (floor) is removed from its housing by simply removing its fastening screw.
- It is essential to insert the heating element with the terminals directed upwards. The holding bar will be positioned in the fixing brackets located in the support plate.





The fan rotor is held by a nut (to undo this: turn clockwise).

1) Straighten the ”safety” tab.

2) Turn the motor ¼ of a turn to remove it from its support.

3) When a new motor has been fitted (offer the motor up and then turn one quarter of a turn), press the ”safety” tab partially in.

This tab is not in contact with the motor. Its function is to confirm that the ¼ of a turn fitting has been carried out correctly and to prevent the motor from becoming detached.

PYROLYSIS

PRINCIPLE OF PYROLYSIS

A – Definition:

Pyrolysis consists of bringing the inside of the oven up to a temperature of approximately 500ºC, whereby all the grease and sugar which has dirtied the oven walls can be burned.

B – Safety:

1) **The door is mechanically locked** during the pyrolysis operation. In fact, opening the door when the oven is at approximately 500ºC would lead to ”self-ignition” of the grease by supplying oxygen.

It is normal for you to see small, brief flames from time to time in the cavity during the pyrolysis cycle. These go out almost instantaneously due to lack of oxygen.

2) **A catalyser,** located in the oven vent, filters and purifies the products of pyrolysis to prevent carbon monoxide from being released into the kitchen.

The role of the catalyser:

The catalyser promotes the conversion of carbon monoxide to carbon dioxide* by reaction with the oxygen contained in the ambient air.

* carbon dioxide: a colourless gas which is heavier than air and non-toxic.

The more the catalyser is heated, the greater the chemical conversion which can take place.

The catalytic cartridge is positioned in the fumes/vapour extraction vent. Its proximity to the upper heating elements means that it is heated during cooking.

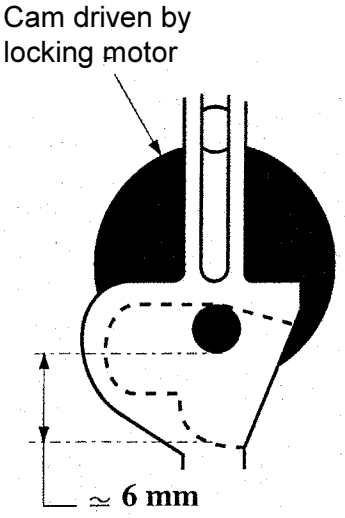
The catalyser is active during cooking.

3) **A fan** comes into operation automatically and thus lowers the temperatures of the outer walls of the oven to prevent overheating of the building-in kitchen units.

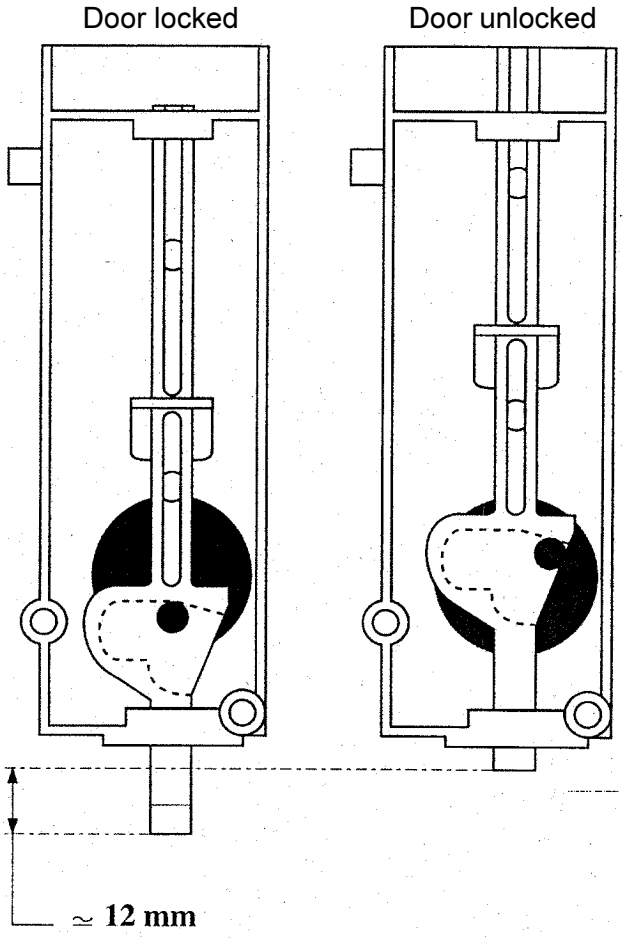
4) The pyrolysis operation can be carried out only under the control **of an operating device** (timer or programmer). This makes continuous pyrolysis without control of the timer impossible.

5) **A temperature limiter** automatically interrupts pyrolysis in the event that the temperature permitted is exceeded.

PYROLYSIS DOOR LOCKING

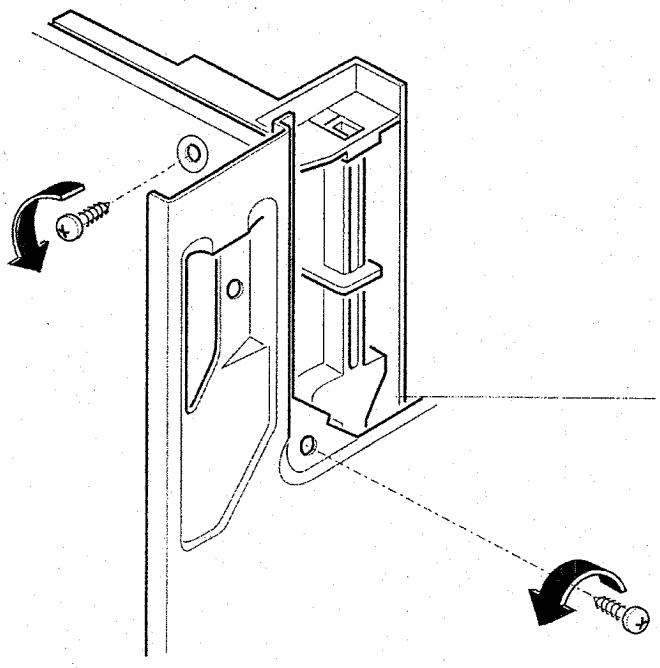


With this clearance of approximately 6 mm, the oven door can be unlocked manually when there is a technical problem.

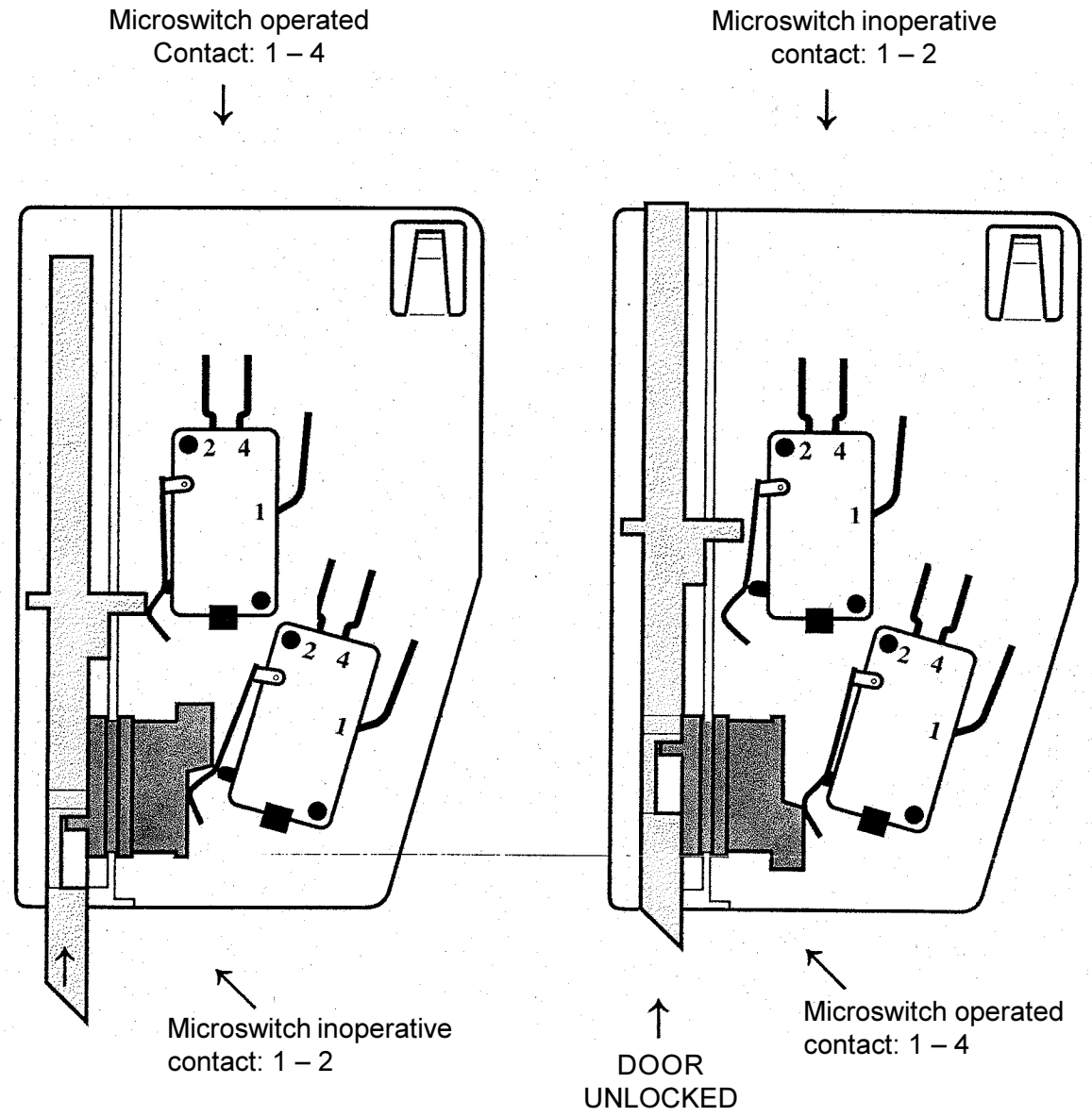


ACCESS TO LOCKING MECHANISM

- Remove the fascia operational assembly to gain access to the front fastening screw.



LOCKING MICROSWITCH



DOOR LOCKED

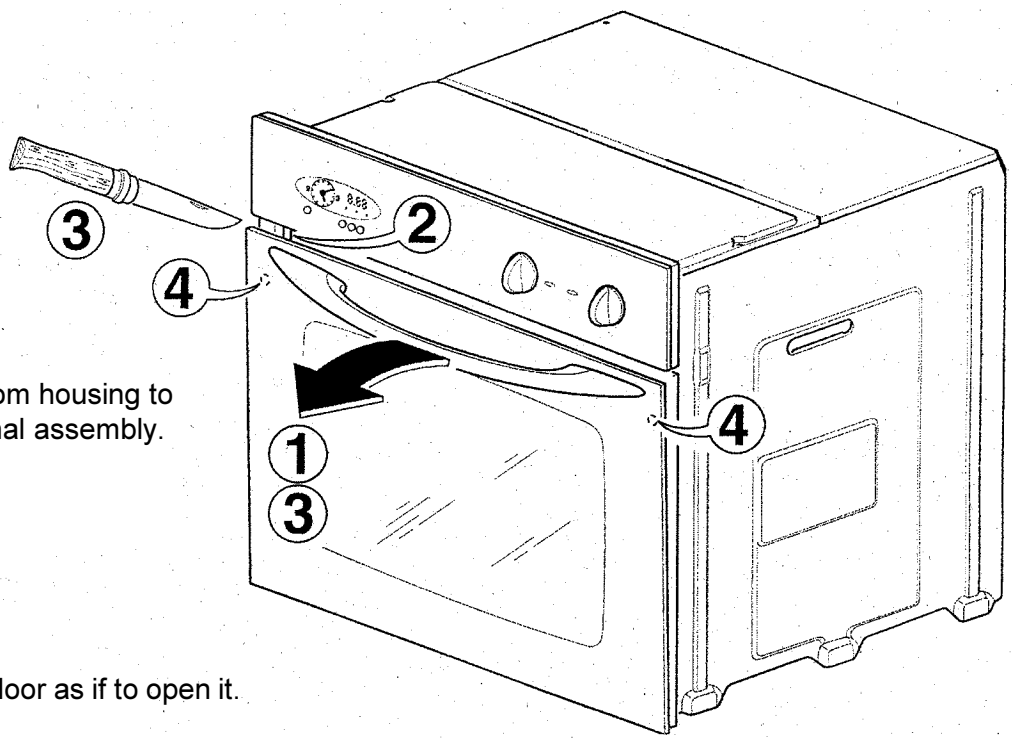
IMPORTANT: the locking motor is special (green plastic)

- it must turn in only one direction (contrary to the spit drive motor).

Check: insert a screwdriver in the square of the motor

- you can only turn it in one direction.

OVEN NOT OPERATIONAL; ”DOOR LOCKED”



Removal of appliance from housing to gain access to operational assembly.

1) Pull gently on the door as if to open it.

2) You see the catch finger (silver in colour) between the door and fascia.

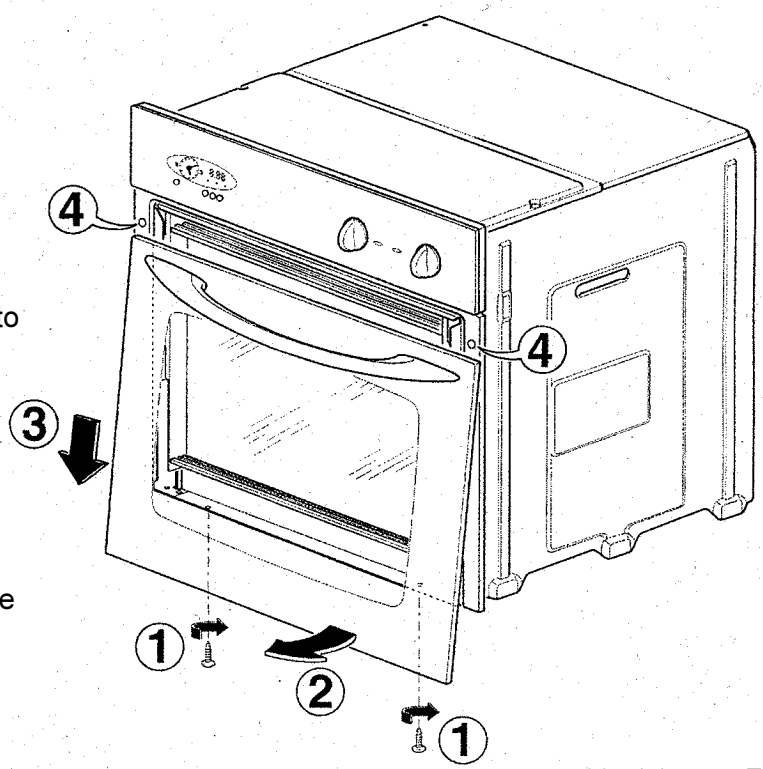
3) Lift the catch finger (using a knife blade) and open the door at the same time (the finger rises approximately 6 mm).

4) The 2 screws for fastening into the housing are accessible for removing the oven from it.

OVEN NOT OPERATIONAL; ”DOOR LOCKED”

Mechanical jamming prevents the catch finger from being lifted (even manually).

Remove the door outer window.

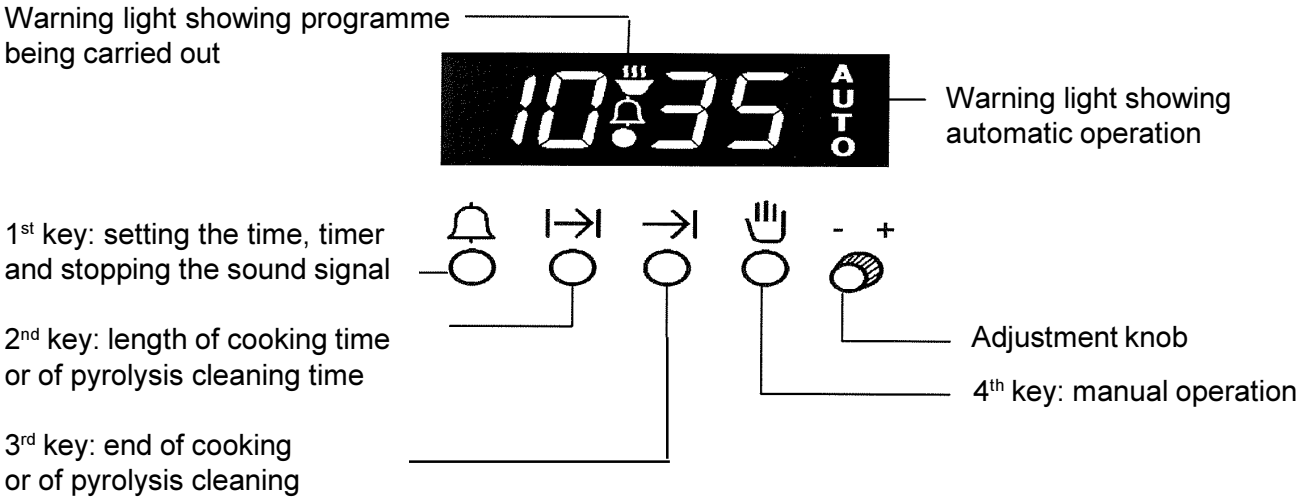


1) Remove the 2 lower window fastening screws.

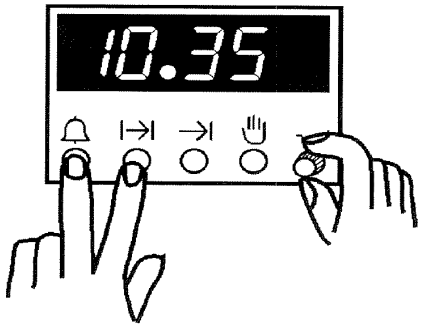
2) At the bottom, move the window away to release the lower fastening brackets.

3) Release from the upper brackets (slid under the inner door) by pulling the window down.

4) The 2 screws for fastening into the housing are accessible for removing the oven from it.


Warning light showing programme being carried out
10:35
AUTO
Warning light showing automatic operation
1st key: setting the time, timer and stopping the sound signal
2nd key: length of cooking time or of pyrolysis cleaning time
3rd key: end of cooking or of pyrolysis cleaning
- +
Adjustment knob
4th key: manual operation

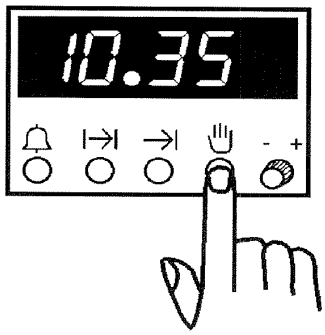
Setting the programmer time



The clock is prepared for showing the hours from 0 to 23 and the minutes from 0 to 59.
After connection of your oven to the electricity mains or after a power cut, your programmer displays "**0.00**" and **AUTO**, flashing.

To set the time:

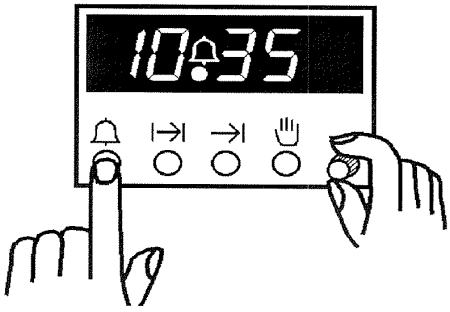
1. press the 1st and 2nd keys at the same time and
2. select the time by turning the adjustment knob right or left, depending on the time to be reached.



Manual operation

The oven can be used manually, i.e. without any programming. Before carrying out any operation, make sure that the programmer is in "manual" use or press the 4th key.

Using the timer:
"hour glass" function



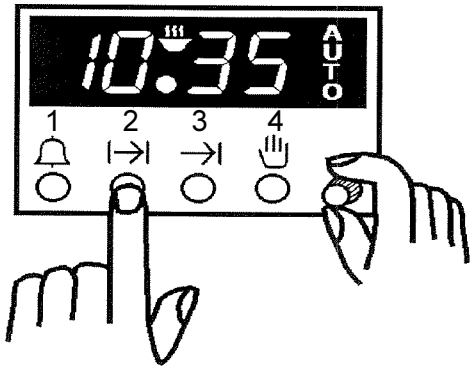
The timer function is independent from the oven and has no effect on switching the oven on or off. It can only be obtained when the programmer is in manual operation mode.

1. Press the 1st key and

2. without releasing it, set the time required by turning the adjustment knob (max. time 23 hrs. 59 mins.). **1** pears.

When the time set has elapsed, the alarm sounds for approximately 2 minutes and **1** flashes. To interrupt the sound signal, press the 1st key. The timer does not interrupt cooking at the end of the time set. To switch the oven off, move the thermostat to the position ● and the function selector to position **0**.

Semi-automatic programming of cooking
(Immediate start – Automatic stop)



1. Press the 2nd key, without releasing it. **4** pears.

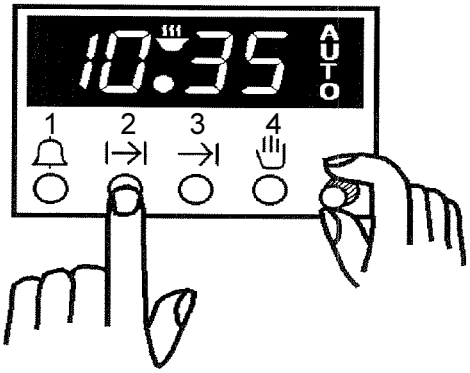
2. With your other hand, turn the knob to obtain **the length of cooking time** required; **AUTO** is displayed.

3. Place the function selector and then the thermostat in the positions required.

When the length of cooking time has elapsed, the alarm sounds for approximately two minutes. To interrupt the sound signal, press the 1st key. **AUTO** flashes and **4** disappears. Go back to manual operation by pressing the 4th key; **AUTO** disappears. **The oven is no longer operating.** However, your food continues to cook due to the residual heat.

4. Move the oven controls to the **Stop** position (thermostat on ● then the selector on **0**).

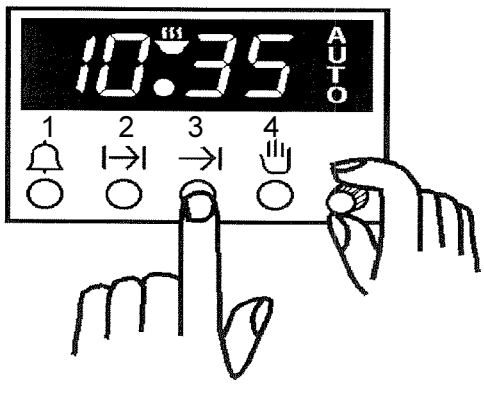
Automatic programming of cooking
(Deferred start – Automatic stop)



1. Press the 2nd key, without releasing it. **4** appears.

2. With your other hand, turn the knob to obtain **the length of cooking time** required; **AUTO** is displayed.

3. Finally, press the 3rd key without releasing it and turn the knob again to set the **end of cooking time.**



4. Place the function selector and then the thermostat in the positions required.

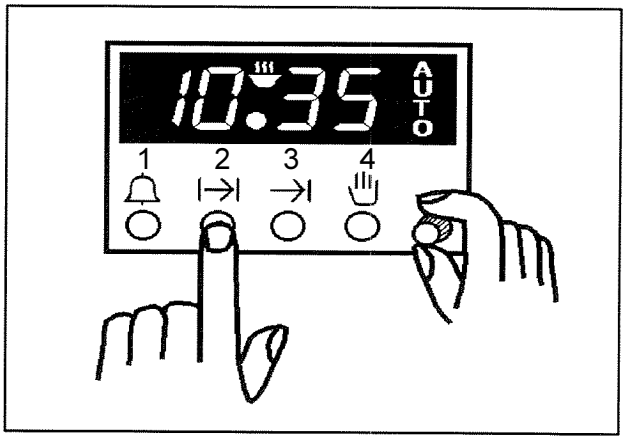
At the end of cooking, the alarm will sound for approximately two minutes. To interrupt the sound signal, press the 1st key. **AUTO** flashes and **4** disappears. Go back to manual operation by pressing the 4th key; **AUTO** disappears. **The oven is no longer operating.** However, your food continues to cook due to the residual heat.

5. Move the oven controls to the **Stop** position (thermostat on ● then the selector on **0**).

Semi-automatic programming of pyrolysis leaning
Immediate start – Automatic stop

1. Turn the **function selector and then the thermostat** to positions **5**; "**P1.30**" and **AUTO** are displayed (pyrolysis taking 1 hour 30 minutes).

5



If you wish to increase the pyrolysis cleaning time (oven very dirty):

2. Press the 2nd key without releasing it and, with your other hand, turn the adjustment knob to increase the **pyrolytic cleaning time** (maximum time of 3 hours).

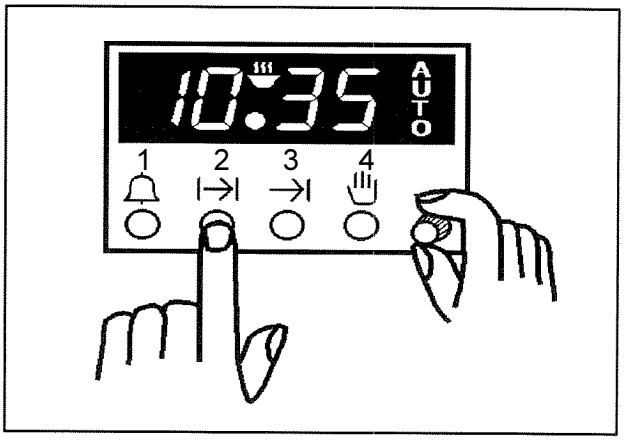
When pyrolysis cleaning has ended, "**P0.00**" and **AUTO** flash and **4** disappears.

3. Move the two oven controls to the **Stop** positions (thermostat on ● and function selector on **0**); **AUTO** disappears. The time is displayed again.

It is normal for the oven door to stay locked after the end of the pyrolysis cleaning cycle until the oven has cooled down sufficiently.

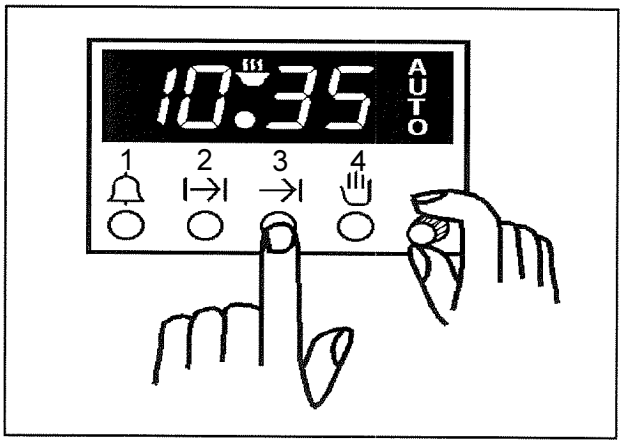
Automatic programming of pyrolysis cleaning
Deferred start – Automatic stop

1. Turn the **function selector and then the thermostat** to positions **5**; "**P1.30**" and **AUTO** are displayed (pyrolysis taking 1 hour 30 minutes).



If you wish to increase the pyrolysis cleaning time (oven very dirty):

2. Press the 2nd key without releasing it and, with your other hand, turn the adjustment knob to increase the **pyrolytic cleaning time** (maximum time of 3 hours).
3. Finally, press the 3rd key without releasing it and turn the knob again to set **the end of pyrolytic cleaning time. 4** disappears.



4 will be displayed when the cleaning start time has been reached.

4. Move the two oven controls to the **Stop** positions (thermostat on ● and function selector on **0**); **AUTO** disappears. The time is displayed again.

It is normal for the oven door to stay locked after the end of the pyrolysis cleaning cycle until the oven has cooled down sufficiently.